PHYTOPATHOLOGY

INDEX TO VOLUME 41, 1951

Volume 41
Number 12
December, 1951

Science
QK
1
.P6

Science
Walk

INDEX FOR VOLUME 41

AUTHOR AND SUBJECT INDEX. New species and varieties in boldface type. Junior authorship indicated by pages in parentheses.

Acer palmatum (Japanese maple), 380
Acidity (see also Hydrogen-ion concentration), soil and tree –, relation to Dutch elm disease susceptibility, 12
Acids, organic, in crown-gall tissue culture, 16
Actidione (see Antibiotics; Fungicides)
Actinomyces (see also Streptomyces) scabies, 2
Actinomycetes, dominance in soil after 2,4-D, 1037
  in sugar-cane soil, 25
ADAMS, DONALD F., (943)
ADAMS, MARK F., (943)
ADAMS, ROBERT E., 568
Adhesives for fungicides, 12
Aerobacter cloacae, 354
Agave sisalana, 771
Agrobacterium tumefaciens, 398
    effect of dyes, 911
    tomato crown gall caused by, 955
    suppression by gamma radiation, 10
  wilt-inducing polysaccharides from, 804
Agropyron, common host for hybridizing smut species, 840
  cristatum, 376
  repens, Physoderma on, 1065
  trachycaulum, 376
Agrostis palustris (seaside bentgrass) (see Turf)
ALEXANDER, L. J., 1, (567)
Alfalfa (Medicago sativa), 189, 922
  Sclerotinia inoculations, 1
  seed treatment, 13, 21, 610
  virus on: witch's broom, 456
ALLISON, J. LEWIS, 1
Alternaria, 938
    in wheat seed microflora, 9
  brassicicola, on cabbage, 823
  citri, black rot of orange, 7
  solani, source of substance toxic to tomato, 30
    tomato collar rot caused by, 16
    tomato early blight caused by, air temperature and incidence, 127
    toxin produced by, relation to tomato early blight, 1104
Alternaric acid, effect on tomato, 1112
American Phytopathological Society, abstracts, 1; annual report, 381
  Divisions, reports and abstracts, 559, 657, 935
AMES, RALPH W., 1, (657)
Anaecentrinus deplanatus (sugar-cane rootstock weevil), 530
Anatomy, of wound periderm in pine infected with blister rust, 277
ANDERSEN, AXEL L., (10)
ANDERSON, CHRIS W., 699
ANDERSON, E. J., 1, 2, 187
ANDERSON, H. W., (393)
ANDERSON, L. D., (20)
ANDERSON, P. J., 657
ANGEL, C. R., (26)
Annulus dubius (potato X virus), 434
  tabaci (tobacco ring-spot virus), 433
Antagonism, Streptomyces griseus for Bacillus subtilis, 428
Anthracnose, bean, 9
  digitalis, 35, 997
  peach, 447
  soybean, 35, 975
  vetch, 18
Antibiotics, 1034
    from Actinomycetes in sugar-cane soil, 25
    inhibition of phytopathogens, 23
    selection of soil organisms for, against plant pathogens, 33
    from tree extracts, against Schizophyllum, 25
  Actidione, control of: turf brown patch, 657
    mint rust, 27
  aureomycin, chemotherapeutic effect on tomato crown gall, 954
  cycloheximide, toxicity to wood-rotting fungi, 22
    for turf diseases, 36
  endomycin, from an Actinomycete, 393
  streptomycin, biological role in soil, 420
    inactivation by colloidal complexes, 425
  streptothricin, inhibition of virus symptoms, 23
  terramycin, inhibition of virus symptoms, 23
Antirrhinum majus, 155
Aphelenchoides ritzema-bosi, nematode yellow bud blight on Vanda orchid, 938
Aphid(s) (see Insects as vectors)
Aphis citricidus, vector of citrus tristeza virus, 105
  fabae, 110
  gossypii, 110, 788
  medicaginis, 111
  rumicis, vector for filaree virus, 705
  tavaresi, 788, 790
Apium graveolens, 224
    var. dulce, 771
Apple, European red mite control, 33, 52
  Physalospora black rot, associated with abscission failure after sprays with growth regulators, 561
  scab, control, 32, 52, 657, 659, 660
  yield and quality affected by fungicides, 659
ARK, PETER A., (804), 1034
ARMSTRONG, G. M., (714)
ARMSTRONG, JOANNE K., 714
ARNY, DEANE C., 691
Arracacha esculenta, 107

Arenaria serpyllifolia, 294
Armillaria mellea, destruction in citrus soils, 665
Aronia arbutifolia (red chokecherry), 380
Aspergillus amstelodami, lipolytic activity, 14
candidus, lipase content, 14
flavus, lipolytic activity, 14
niger, 164; conidial germination, 943
terreus, lipase content, 14
Association(s), bacterial pathogens of soybean, 14
bean rust infection increases invasiveness of tobacco mosaic virus infection, 39
in tobacco, etch virus response and white burley character, 1125
Aster, China, 190
Astragalus spp., as hosts for alfalfa witch's-broom virus, 457
ATKINS, J. G., JR., 2, (18), 300
Atropa belladonna (Belladonna), 457
Aureogenus vastans, potato yellow dwarf virus, properties, 213
Aureomycin (see Antibiotics)
Avena sativa, 376
Avocado, Botryosphaeria fruit rot, 946
AYCOCK, ROBERT, 2, 459
AYERS, T. T., (563)

Bacillus cereus, 398
megatherium, 354, 357, 359
subtilis, 398, 421
Bacteria (see also Aerobacter, Bacillus, Bacterium, Corynebacterium, Erwinia, Phytomonas, Pseudomonas, Xanthomonas):
in corn root-and-stalk-rot complex, 26
in healthy potato tissues, 350
in wheat seed microflora, 9
Bactericides, silver, for soft-rot bacteria, 710
Bacterium globiforme, 354
stewartii, in corn, distribution determined by use of radioisotopes, 794
tabacum, multiplication in leaves of resistant Nicotiana longiflora, 10
BAKER, KENNETH F., (536)
BAKER, R. W., (164)
BALD, J. G., 935
Baldulus (see Dalbulus)
Banana wart, resemblance to Sphaceloma disease, 3
Baptisia australis (blue wild-indigo), 379
BARDIN, ROY, (939)
Barley (see also Hordeum):
mildew, downy, 942
powdery, 622
seed treatment in South America, 369
smut, black loose —, races in U. S. and Israel, 139
loose —, in seeds, seedlings, and adult plants, 261
spot blotch, 691
virus on: a seed-borne —, cause of false-stripe, 563
BARNETT, H. L. (327)
BASKIN, A. DAVID, 2
Bean (see also Phaseolus):
anthracnose, 945
Botrytis on, chemotherapeutants for, 8
mildew, powdery, 945
rust, 945
infection related to tobacco mosaic virus infection, 39
infection related to water-soaking, 937
seed treatment in South America, 372
viruses on: alfalfa mosaic —, strain causing yellow dot virosis, 566, 967
red node —, 764; seed transmission, 959
Southern bean mosaic —, relation to black root of bean, 5, 865
white clover mosaic —, 945
broad — (Vicia faba), 815
potato yellow dwarf virus on, 490
Lima —, downy mildew (Phytophthora phaseoli), 566
resistance to Lima-bean mosaic virus, 231
Rhizoctonia root rot, 20
stem anthracnose, caused by Colletotrichum truncatum, 9
snap —, viruses on: common bean mosaic —, 567
Southern bean mosaic, 567
BECKMAN, C. H., 2
BEECHER, R. L., (7)
BEESON, D. M., (35)
Beet (see also Beta vulgaris; Sugar beet): seed treatment in South America, 372
BELL, FRANK H., 3
BELL, LOIS, 25
Belonolaimus gracilis (sting nematode), on peanut, 29
BENNETT, C. W., (415), 935
BENSAUDE, MATHILDE, 3
BERKELEY, G. H., 3
Beta vulgaris, 224
BEVER, WAYNE M., 875
BHATTACHARYYA, P. K., (393)
BIRCHFIELD, W., 4
BLACK, L. M., 213
BLANCHARD, FRED A., 954
BLANK, LESTER M., (499)
BLISS, DONALD E., 665
BOASSO, CELIA S., 736
BOONE, D. M., 4, (19)
Botryosphaeria ribis (Dothiorella sp.), avocado fruit rot, 946
Botrytis, 938
sp., use in test of vapor-phase toxicants, 30
cinerea, 546
chemotherapeutants for, 8
on grape, 319
histology, 941
role of relative humidity, 859
on lily, 941
elliptica, on lily, 941

fabae, chemotherapeutants for, 8
gladiolorum, gladiolus leaf spot, control, 940
BOWMAN, D. R., (7)
BOYLE, LYTTON W., 4
Brassica chinensis (pak choi), 908
juncea (mustard), 908
nigra (mustard), 908
oleracea var. botrytis, 224
var. capitata (cabbage), 822
BRAUN, ALVIN J., 4, 5, 963
BRAUN, ARMIN C., 1126
BRETZ, T. W., (561)
BRIDGMON, G. H., 5, 865
BRIERLEY, PHILIP, (66), (190)
Bromus catharticus, 844
purgans, 841
tectorum (cheatgrass or downy brome), 842
Bronze leaf, of coconut palm, 765
Browallia americana, 347
speciosa, 347
BROWN, R. W., (164)
Brucella abortus, 398
BRUEHL, GEORGE W., 375
BUCHANAN, THOMAS S., 199
BUCHHOLTZ, W. F., (32)
Buddleia davidi (orange-eye butterfly bush), 380
BUTLER, E. E., 5

Cabbage, black leaf spot (Alternaria brassicicola), 823
blackleg (Phoma lingam), seed transmission, 822
black rot (Xanthomonas campestris), 821
clubroot resistance, 37
mosaic resistance, 1083
ring spot (Mycosphaerella brassicicola), 826
seed transmission of pathogens, 820
Cacao (Theobroma cacao), gall on floral cushion, cause unknown, 562
hollow heart (cause unknown), 656
CAIN, JOHN C., 661
Cajanus cajan (pigeon pea), 715
CALAVAN, E. C., 936
Calcium, in peach infested with root-knot nematode, 569
Callistephus chinensis, 224
Callus, relation to productivity of roses, 196
CALVERT, O. H., (820)
CAMPBELL, W. A., 5, 439, 742
Candida albicans, 398
guilliermondi, 398
Canker(s), Ceratostomella —, on coffee tree, 179
on cinchona: girdle — (Phytophthora parasitica), 644
stripe — (Phytophthora cinnamomi), 641
heat —, collar rot of peanut, 4
Strumella —, on bur oak, 101
Canna, aster yellows virus in, 190
CANNON, ORSON S., 936, (986)
Cantaloupe, nematode root-knot control, 560
virus on: mosaic —, 2
Capitophorus fragaefolii, 223
Capsicum (see also Pepper):
annuum, potato X virus on, 18
frutescens, 347
nematode resistance in, 16
Carborundum, use in virus inoculations, 231, 584
CARDONA, CANUTO, (915)
Carnation (Dianthus caryophyllus), anther smut (Ustilago violaceae), 291
Fusarium wilt, chemotherapeutic control, 33, 337
virus on: mosaic —, inactivation, 301; partial purification, 1
wilt (fungus and bacterial), effect of soil-disinfesting chemicals, 657
Carneocephala fulgida, vector for Pierce's disease virus of grape, 920
CAROSELLI, N. E., 6, (12), 46
Carotene, in sweet-potato mutants, relation to disease reaction, 564
CARPENTER, T. R., 6
Carrot, Alternaria and Stemphylium on, 939
virus on: big-bud —, cause of bolting disease, 22
CARTER, H. E., (393)
CARTER, WALTER, 769
CASSELL, R. C., (286)
Cassia tora, Fusarium on, 717
Cellosolve, 165
Cenchrus echinatus (sandbur), 771
Centrospora acerina, physiology and pathogenicity, 1021
Ceratostomella fimbriata, cause of coffee tree canker, 182
pilifera, 182
ulmi, 12, 146
chemotherapy, 6
in elm seedlings, 46
Cercospora sojina, soybean seed discoloration, 565
Cercosporina kikuchii, soybean purple seed stain, 310
Chalara quercina, 659
surveys for, 561
Chamaecyparis lawsoniana, Phytophthora root rot, 944
CHAMBERLAIN, D. W., 6
CHAPMAN, H. D., (940)
CHAPMAN, R. A., 6, (11)
Chemotherapeutants, relation to infection court, 6
aryloxyaliphatic acids:
pentachlorophenoxyacetic acid, 8
pentachlorophenoxyisobutyric acid, 8
2,4,6-trichlorophenoxyacetic acid, 8
4-chloro-3,5-dimethylphenoxyethanol, for Fusarium wilts, 11, 34, 337
copper 8-quinolinolate, 34

Dithane D-14 (disodium ethylene bisdithiocarbamate), for strawberry red stele, 34, 858
8-hydroxyquinoline benzoate, 6, 7
for Ceratostomella ulmi, 6
for Fusarium lycopersici, 6
n-(4-nitrophenyl)-3,4-dichlorobenzenesulfonamide, 6, 7
2-norcamphane methanol, 11, 33, 337
n-octadecyldimethylbenzylammonium chloride, 6, 7
n-octadecyltrimethylammonium bromide, 6, 7
n-octadecyltrimethylammonium pentachlorophenate, 6, 7
8-quinolinol sulfate, 33, 337
Chemotherapy, for carnation Fusarium wilt, 33, 337
for Dutch elm disease, 6
for strawberry red stele, 34, 858
for tomato crown gall, 954
Chenopodium hybridum, local lesion host for cucumber mosaic virus, 31
CHEO, PEN-CHING, (820)
CHEREWICK, W. J., 7
CHERRY, E., (282)
Cherry:
leaf spot, control, 12, 466
mildew, powdery, control, 12
viruses on: little-cherry —, symptoms modified by light, 136
Western-X little-cherry —, histology of fruits and pedicels, 941
sour (Prunus cerasus), cucumber virus from, 16
virus-infected Montmorency trees, response to N, 661
virus on: ring spot and yellows, effect on yield, 24
CHESSIN, MEYER, 235
Chestnut (Japanese), blight (Endothia parasitica), in Europe, 561
Chicory (Cichorium intybus), bacterial soft rot, caused by Pseudomonas marginalis, 880
CHILTON, S. J. P., (25), (37), (522)
CHITWOOD, G. B., 559
Chlorogenus vaccinii, cranberry false-blossom virus, 722
Chlorosis, of soybean, K deficiency, 7
Chokecherry, virus on: X-disease —, 14
CHRISTENSEN, J. J., (1011)
CHRISTIE, J. R., 7
Chromosomes, in Physalospora obtusa, 460
Chrysanthemum, Fusarium bud rot, 560
varieties as stunt virus indicators, 947
viruses on: stunt and virus Q complex, 947
Cicer arietinum, 224
CIFERRI, R., 656, 765, 766
Cinchona, Phytophthora cankers, 641
Circulifer tenellus (beet leafhopper), curly-top virus vector, 936
Citrullus vulgaris, 19
Citrus:
Armillaria in soils, 665
viruses on: quick-decline — and related —, 785
tristeza —, 105
aurantium (sour orange), 106
limon (lemon), 108
paradisi × reticulata (tangelo), 107
sinensis (sweet orange), 19, 106
Cladosporium cucumerinum, spore germination and ultraviolet light, 35
epiphylum, spore germination and ultraviolet light, 35
herbarum, cause of grape storage rot, 937
CLAYTON, E. E., 7
Climate, effect on snapdragon rust, 536, 542
Clover (see also Melilotus, Trifolium):
alsike (see also Trifolium hybridum), 815
crimson (see also Trifolium incarnatum), potato yellow dwarf virus on, 490
Ladino (see also Trifolium repens), 754
mosaic of, 940
Sclerotinia trifoliorum on, 553
red (see also Trifolium pratense), black-patch, 23, 1041
Fusarium wilt, 7
root and crown rots, 21
Sclerotinia trifoliorum on, 553
seed treatment, 13, 21, 610, 1041
seedling blight, 23
virus on: vein-mosaic —, 813
sweet (see also Melilotus), 815
seed treatment, 13, 21, 610
white (see also Trifolium repens), 815
Clubroot, cabbage resistant to, 37
Coccomyces, on Prunus species, varieties, and hybrids, 27
Coccus viridis, 111
COCHRAN, GEORGE W., 936
COCHRAN, L. C., 936, (942)
Coconut, bronze leaf disease, 765
Coffea arabica (see Coffee)
Coffee (Coffea arabica), Ceratostomella canker, 179
Omphalia disease, control by defoliation, 38
COHEN, MORRIS, 937
COHEN, SYLVAN I., 657
Colletotrichum:
isolates pathogenic to Easter lily, 29
technique for inoculating sorghum with, 378
falcatum (see also Physalospora tucumanensis), red rot of sugar cane, 522
control, 37
fuscum, cause of digitalis anthracnose, 35, 997
lilii, on Easter lily bulbs, 29
phomoides, 398, 449, 658
sp., anthracnose of veteh, 18
truncatum, delayed sporulation on soybean, 35, 975
stem anthracnose of bean, 9
Colocasia esculenta (taro), 771

Coniothyrium fuckelii, tolerance to copper, 21
COOLEY, J. S., 379, 801
COONS, G. H., 559
Copper, toxicity for fungus spores, reversed by sulfhydryl compounds, 39
Copper sulphate, tolerance of Coniothyrium, 21
Corn, Bacterium stewartii on, distribution in plants determined by use of radioisotopes, 794
disease tests, by glass tumbler-greenhouse method, 18
by glass-tumbler–paper-doll method, 857
seed corn incubated in cold soil, 18, 747
for stalk-rot reaction, 26
ear rot, identity of species causing, 378
relation of husk coverage and ear declination, 22
grain deterioration, 14
grain yield affected by leaf diseases, 36
Guatemalan —, resistant to Helminthosporium turcicum, 34
predisposed to seedling disease by low soil temperature, high moisture at harvest, and artificial drying, 24
root-and-stalk-rot complex, 26
seed decay by Pythium, embryo as factor, 17
seed treatment in South America, 367
viruses on: citronella mosaic —, 759
corn stunt —, mechanical transmission to insect vector, 833
sugar-cane mosaic —, 758
Corticium galactinum, white root rot of ornamentals, control, 379
Corynebacterium sepedonicum, 186
xerose, 398
COSTA, A. S., 105, (114), 758
Cotton, abnormal bolls (intercapsulary carpels), 11
bacterial blight (Xanthomonas malvacearum), histology, 499
nematode root knot, 14
nematode root rot, 14
soreshin (Rhizoctonia solani), related to thrips damage, 854
COURTNEY, WILBUR D., 40
Cowpea, Fusarium on, 717
COX, C. E., 8, (32), 560, (565)
COX, R. S., 560, (562)
CRALL, J. M., 7
CRALLEY, E. M., 7, 8
Cranberry, false blossom (virus) resistance, 722
resistance to vectors, 722
Criconemoides sp., nematode on potato, 24
CRITOPOULOS, P. D., 937
CRITTENDEN, H. W., 560, (562)
Cronartium ribicola, wound periderm formation in pine, 276
Crop rotation, effect on tobacco nematodes, 31
in irrigated lands, for Phymatotrichum root-rot control, 944
Crotalaria spp., wilted by Fusarium, 716
CROWDY, S. H., 8
Crown gall, cellular autonomy, 963
tissue culture, relation of organic acids, 16
of tomato, 10
aureomycin chemotherapy, 954
gall size affected by dyes, 911
Cucumber (see also Cucumis sativus), angular leaf spot (Pseudomonas lachrymans), 38
bacteria in fruit and seed, 1059
bacterial wilt (Erwinia tracheiphila), role of host nutrition, 38
presence of virus inhibitor, 32
scab resistance, 37
virus on: cantaloupe mosaic —, 2
Cucumber, wild (Echinocystis oregana), 942
Cucumis sativus, 224, 490, 817
Cucurbito pepo, 224
Cucurbits, reaction to cucumber virus from sour cherry, 16
Cunninghamella sp., 5
Cuscuta californica, curly-top virus transmission, 936
Cycloheximide (see Antibiotics)
Cyclone separator, 282, 286
Cymbidium, virus on: mosaic — or black-streak —, 401
Cymbopogon nardus (citronella), 758
Cypress, Lawson, 944
Cysteine hydrochloride, 487
Cytology, of Physalospora obtusa, 459
of Puccinia graminis tritici on Triticum, 15

DAINES, ROBERT H., 8
Dalbulus maidis (Baldulus maidis), 833
leafhopper injected with corn stunt virus, 658
DALLIMORE, C. E., 872
Damping-off, of Elaeagnus by Rhizoctonia, 619
of soybean, by Rhizoctonia solani, 13
Daphne odora, Phytophthora parasitica on, 654
DARBY, J. F., (23)
DARBY, JOHN F., 9
DARLEY, ELLIS F., 641
Datura meteloides, 20, 33
stramonium, 4, 20, 435
DAVIDSON, R. S., 9
DAVIDSON, ROSS W., 560
DAVIS, LILY H., 937
DAVIS, S. H., 657
DECKER, PHARES, 9
DEEMS, ROBERT E., 9, 633
Defoliation, 194
to control Omphalia on coffee trees, 38
DELP, CHARLES J., 937
DEMAREE, J. B., 10
Deutzia gracilis (slender deutzia), 380
DE ZEEUW, D. J., 10
DIACHUN, STEPHEN, 10

Dianthus barbatus, 945
carnation mosaic on, 302
caryophyllus (see also Carnation), anther smut on, 291
mosaic on, 302
Diaphorina citri, 111
Diaporthe phaseolorum batatatis, sporulation of, 327
DICKSON, JAMES G., (15)
DICKSON, R. C., (20)
DIEHL, W. W., 567
DIETZ, S. M., 938
Digitalis ambigua, 35
ferruginea, 35
lanata, Colletotrichum anthracnose on, 35
purpurea, 35
anthracnose, caused by Colletotrichum fuscum, 997
sibirica, 35
Dill (Anethum graveolens), Fusarium root rot and wilt, 19
DIMOCK, A. W., 152, 157, 536, 781
DIMOND, A. E., 10, 11, (337), (659), 911
Diplodia natalensis, cause of peanut stem rot, 19
zeae, on corn, 22, 26
Ditylenchus destructor (potato rot nematode), on sugar beet, 872
dipsaci, races on alfalfa, 189
DOOLITTLE, S. P., 567
Draeculacephala minerva, vector for Pierce's disease virus of grape, 920
DUNEGAN, J. C., 560
Dutch elm disease, 6, 46
spread from infection source, 146
susceptibility related to soil and tree acidity, 12
Dyes, effect on crown gall size, 911

EARHART, ROBERT W., 11
Echinocystis oregana (wild cucumber), mosaic virus on, 942
Eggplant, varieties resistant to Phomopsis blight, 9
yellows, caused by tobacco ring-spot virus, 209
Elaeagnus pungens, silky threadblight, caused by Rhizoctonia ramicola, 615
Electron microscopy, 1, 33, 35, 80, 95
Eleusine indica (wire grass), 771
ELLIOTT, E. S., (23), (1041)
ELLIS, D. E., (123)
Elm, Dutch elm disease, chemotherapy, 6
in seedlings, 46
spread from source, 146
susceptibility related to acidity, 12
Elymus, common host for hybridizing smut species, 840
canadensis, 841, 844
glaucus, 841
Elsinoë, scabs, in Maryland, 562
spot anthracnoses, in Maryland, 562
Emanation (ethylene), from virus-infected plants, 431
EMERSON, FRANK, (5)
EMGE, ROBERT G., 11
Endoconidiophora fimbriata, sweet-potato black rot fungus, control, 801, 943
Endomyces magnusii, 398
Endomycin (see Antibiotics)
Endothia parasitica, on chestnut and oaks, in Italy, Switzerland, and Spain, 561
ENGEL, R. E., (657)
ENGLISH, HARLEY, 938
Entyloma ellisii, on spinach, 854
Environment, preinoculation —, for powdery mildew on barley and wheat, 622
role in determining fungal complex in Vanda orchid blossom rot, 938
role in snapdragon rust, 536, 542
EPPS, W. M., 245
Eriophyes cladophthirus (mite), tomato white mold, 563
Erodium botrys (broad-leaf filaree), 221
cicutarium (red-stem filaree), 221
moschatum (white-stem filaree), 221
Erwinia amylovora, in pear, 6
rubi n. f. sp., cause of raspberry fireblight, 919
carotovora, endotoxins and wilt-inducing polysaccharides from, 806
in spinach, 710
tracheiphila, cucumber bacterial wilt, 38
Erysipelothrix rhusiopathiae, 398
Erysiphe graminis, on barley, preinoculation environment, 622
on wheat, preinoculation environment, 622
Erythrina herbacea, 615
Escherichia coli, 398
Ethylene, from virus-infected plants, 31, 431
Exochorda racemosa (common pearlbush), 379
Eucephalobus oxyuroides (nematode), associated with yellow tuft of bent grass, 566
Euonymus americana (brook Euonymus), 380
fortunei var. vegetus (bigleaf wintercreeper), 380
EZELL, BOYCE D., (477)

FAAN, HWEI-CHUNG, 11, 12, 1001
FASSULIOTIS, G., (31)
FEBER, WILLIAM A., 804, 938
Feijoa sellowiana, 615
FELDMAN, A. W., (6), 12, (46)
FELDMESSER, J., (31)
FELIX, E. L., 12
FENNE, S. B., (1091)
FERGUS, CHARLES L., 101
FERGUSON, JOHN, 939
FERGUSON, M. H., (566)
Filaree (see also Erodium), red-leaf virus on, transmission by aphids, 221, 699
FINK, H. C., 12
FINLEY, ARTHUR M., (238)
Fir (silver), disease of unknown cause, in Europe, 561
Fireblight, in pear hybrids, 6
of raspberry, 915
FISCHER, GEORGE W., 839, (854), (943)

FISHER, H. H., (566), (567)
Flax wilt, 22
FLORES, MARCO A., (641)
Fluorine, injury to ponderosa pine, 943
FOLL, S. C., (196)
FOLSOM, DONALD, (915)
Forecasting, late blight of potato and tomato, 37
Formulae, for susceptibility of cranberry to leafhopper virus vector, 726
FOWLER, DORSEY L., (30)
FOWLER, MARVIN E., 561
Fragaria chiloensis var. ananassa, 224
vesca, indexing host for strawberry viruses, 10
Frankliniella sp., 20
fusca, tobacco thrip, 854
Fraxinus nigra (black ash), heart rot (Polyporus hispidus), 569
FRAZIER, NORMAN W., 221
FREDERICK, LAFAYETTE, 12
FREEMAN, I. E., (245)
FREITAG, J. H., 920
FRENCH, R. G., (8)
FRIEDMAN, B. A., 709, 880
FULTON, J. P., 13, 99
FULTON, NEIL D., (13), (99)
FULTON, R. W., 13, (23), 579
FULTS, JESS L., (991)
Fungicides, general (see also Chemotherapy):
activity and chemical constitution, 164
adhesives, 12
air-blast sprays, for peach diseases, 938
cyanamides, relation to pH and soil organic content, 2
deposition on foliage, sampling by leaf punch, 568
field tests, for vegetable disease control, 1050
laboratory assay, for gladiolus leaf spot control, 940
organic, specificity of Sclerotinia and Stemphylium to, 658
oxidized substituents decrease toxicity of reduced compounds, 18
role in dispersal of fungus spores, 157
seed pelleting, 13, 28
snapdragon rust control and climate, 548
spray program for tomato, ziram and Bordeaux in schedule, 660
substituents and activity, carboxy groups, 168
halogens, 166
hydrocarbons, 166
hydroxy groups, 169
nitro groups, 167
position effect, 169
ring compounds with N, 168
sulfonic acid, 168
top soil applications to control carnation wilts, 657
Fungicides, specific compounds (see also Chemotherapeutants):
224 (zinc mercury chromate), for corn seed treatment, 747
341 (2-heptadecyl-glyoxalidine), formulations for cherry leaf spot, 467
341B, on cherry, 12
341C, for apple scab, 32
for Botrytis leaf spot of gladiolus, 940
640 (zinc copper chromate), for corn seed treatment, 747
Actidione, for mint rust, 27
for turf brown patch, 657
Arasan (tetramethylthiuram disulfide) (see also Tersan, TMTD), 24, 28, 32, 565
for pelleting soybean seed, 13
for Rhizoctonia on slash pine, 4
for seed treatment of: alfalfa, 610
bean, 372
beet (red), 372
cereals, 369
clover, 610
corn, 367, 747
digitalis, 998
legumes, 13, 21, 610
pea, 373
peanut, 371, 372
rice, 8, 370
sorghum, 371
soybean, 13, 19
Arasan SF, for pelleting soybean seed, 13
for seed treatment of: legumes, 21
soybean, 19
Arathane (dinitro capryl phenyl crotonate), apple scab control, 54
European red mite control, 54
Bioquin 1 (copper 8-quinolinolate), 157, 159
for avocado fruit rot, 946
for cherry, 12
for snapdragon rust, 548
Bordeaux, 38, 159, 466, 938
for avocado fruit rot, 946
for cherry leaf spot and mildew, 12
for potato early blight, 562
for potato late blight, 562
for Pyracantha scab, 560
for snapdragon rust, 548
zinc —, for peach bacterial spot, 25
calcium hydrate, healing of cut potato sets, 1078
Caloclor (mercuric and mercurous chloride), for turf brown patch, 657
Ceresan (ethyl mercury chloride), for narcissus bulbs, 566
for seed treatment of: beet (red), 372; cereals (barley, rye, wheat), 369; pea, 372, 373; peanut, 371; rice, 370; sorghum, 372; soybean, 19
Ceresan M (ethyl mercury p-toluene sulfonanilide), for narcissus bulbs, 566
for seed treatment of: alfalfa and clover, 610; digitalis, 998; legumes, 13; pea, 10; rice, 8; soybean, 19
Ceresan, New Improved (ethyl mercury phosphate), healing of cut potato sets, 1078
for narcissus bulbs, 566
for soybean seed treatment, 19

chlorine compounds, in wash water, for control of spinach soft rot, 709
copper, 39, 620
for peach bacterial spot, 25
for peach Coryneum blight and leaf curl, 938
for tomato late blight control, 39
Copper A (copper oxychloride), for potato early blight, 562
for potato late blight, 562
copper sulfate, 938
for peach bacterial spot, 25
Cupro K (copper oxychloride), 467
cuprous oxide–sulfur dusts, for mint rust, 27
for onion mildew, 28
tribasic copper sulfate, on cherry, 12
tribasic copper sulfate–zinc, as dust, for mint rust, 28
CR305 (bis (2-hydroxy,5-chlorophenyl) sulfide), 157, 159
Crag 341C (2-heptadecyl glyoxalidine), for apple scab, 659
Crag 531 (calcium zinc copper cadminate), for turf brown patch, 657
Crag 1025 (cadmium and mercury complex), for turf brown patch, 657
Crag Potato Fungicide 658 (copper zinc chromate), for avocado fruit rot, 946
dimethyl dithiocarbamates, for tomato late blight control, 39
Dithane D-14 (disodium ethylene bisdithiocarbamate), 34, 858
for potato early blight, 562
for potato late blight, 562
Dithane Z-78 (zinc ethylene bisdithiocarbamate), 685, 686, 687
for potato early blight, 561
for potato late blight, 561
with sulfur, for mint rust, 27; for onion mildew, 28
Dow 9B (zinc trichlorophenate), for legume seed treatment, 21
for soybean seed treatment, 19
Dowicide A, for Vanda orchid blossom rot, 938
ethyl mercury chloride (see also Ceresan), as dip, for celery crown rot, 1031
ethylene bis dithiocarbamates, for tomato late blight control, 39
ferbam (ferric dimethyl dithiocarbamate) (see also Fermate), on cherry, 12
for gladiolus corm dip, 935; leaf spot, 940
for grape black rot control, 5
Fermate (ferric dimethyl dithiocarbamate) (ferbam), 157, 159, 685
for apple scab, 32, 659
healing of cut potato sets, 1078
for legume seed treatment, 21
for mint rust, 27
for Pyracantha scab, 560
for snapdragon rust, 548
for sugar-cane red rot, 37
formaldehyde dip, for soybean purple seed stain, 316
formaldehyde drip, for onion smut, 28
formalin, with hot water, treatment of iris bulbs for nematode control, 40
glyoxalidines, for apple scab, 52, 660
for cherry leaf spot, 466
for European red mite, 52
Granosan, for seed treatment of: cereals (barley, rye, wheat), 369; corn, 367; pea, 373; rice, 371
Karathane (2-capryl-4,6-dinitrophenyl crotonate), for rose powdery mildew and mites, 563
Leafox 200A (zinc oxide), for pelleting soybean seed, 13
lime sulfur, for apple scab, 32
on cherry, 12
for Pyracantha scab, 560
for snapdragon rust, 548
Lysol, for gladiolus corm dip, 935
Merck H258M, on cherry, 12
mercurials, for carnation wilt control, 658
mercuric chloride, healing of cut potato sets, 1078
for sugar-cane red rot, 526
nabam (disodium ethylene bisdithiocarbamate) (see also Parzate), 30
for Botrytis leaf spot of gladiolus, 940
Orthocide, for onion smut, 28
Orthocide 406 (N-trichloromethylthio tetrahydrophthalimide), for cherry, 12
for turf brown patch, 657
Parzate (disodium ethylene bisdithiocarbamate) (nabam), 30, 157, 159, 940
for avocado fruit rot, 946
for legume seed treatment, 21
for snapdragon rust, 548
for sugar-cane red rot, 37
Phygon (2,3-dichloro-1, 4-naphthoquinone), for apple scab, 32, 659
on cherry, 12
for potato seed pieces, 945, 946
for seed treatment of: bean, 372; beet (red), 372; corn, 367, 368; legumes, 13, 21; pea, 373; peanut, 371; rice, 371
for sugar-cane red rot, 526
Phygon Paste, for legume seed treatment, 21
Phygon XL (2,3-dichloro,1, 4-napththoquinone), 159
for Botrytis leaf spot of gladiolus, 940
for legume seed treatment, 21
for Pyracantha scab, 560
Phygon XL-DDT, for seed treatment, alfalfa and clover, 610
PMAS (phenyl mercuric acetate), for turf brown patch, 657
Puratized Agricultural Spray (phenyl mercury triethanol ammonium lactate), for apple scab, 32, 657
for cherry, 12
for carnation wilt, 658
for gladiolus leaf spot, 940
for Pyracantha scab, 560

for sweet-potato diseases, 562
Puratized Apple Spray (phenyl mercury monoethanol ammonium acetate), for apple scab, 657
for carnation wilt, 658
Puratized N5E (phenyl mercury trihydroethyl ammonium lactate), 524
Puratized 806 (phenyl mercury formamide), for apple scab, 657
Puraturf (phenyl mercury triethanol ammonium lactate), for turf brown patch, 657
Puraturf 177 (phenyl amino cadmium dilactate), for turf brown patch, 657
Seedox (2,4,5-trichlorophenyl acetate), for seed treatment of: wheat, 370
Semesan (hydroxymercurichlorophenol), for digitalis seed treatment, 998
for Rhizoctonia on slash pine, 4
Semesan Bel (hydroxymercurinitrophenol and hydroxymercurichlorophenol), healing of cut potato sets, 1078
for potato seed-piece treatment, 945
Semesan Jr., for seed treatment of: bean, 372; corn, 367; rice, 370; sorghum, 372
silver compounds, on cellophane, to control spinach soft rot, 710
sodium hypochlorite, for peach bacterial spot, 25
Spergon (tetrachloro-para-benzoquinone), 685
healing of cut potato sets, 1078
for Rhizoctonia on slash pine, 4
for seed treatment of: bean, 372; corn, 368; legumes, 21; pea, 373; peanut, 371; rice, 371; sorghum, 372; soybean, 19; vegetables, 372, 373
for sugar-cane red rot, 526
Spergon W, for legume seed treatment, 21
SR406 (N-trichloro-methylthio-tetrahydrophthalimide), 157, 159
Sulforon X, for apple scab, 32
sulfur, 160
for apple scab, 32, 659, 660
for cherry, 12
healing of cut potato sets, 1078
for Pyracantha scab, 560
for snapdragon rust, 548
soil applications for potato scab control, 29
Tag (phenyl mercuric acetate), for apple scab, 32, 659
for celery crown rot, 1031
Tag 331, for apple scab, 660
for carnation wilt, 658
Tersan (tetramethylthiuram disulfide) (see also Arasan and TMTD), 4, 524
for legume seed treatment, 21
for pelleting: onion seed, for smut, 28
soybean seed, 13
for sugar-cane red rot, 526
for turf brown patch, 657
TMTD (tetramethylthiuram disulfide) (see also Arasan and Tersan), 32
carbon disulfide released by fungi, 565
for onion smut, 28
Vancide 51, for soybean seed treatment, 19
Zerlate (zinc dimethyl dithiocarbamate), for sugar-cane red rot, 37
zineb (zinc ethylene bisdithiocarbamate), 30
for cherry, 12
with a fixed copper, 39
Fusarium, 338
chrysanthemum bud rot, 560
in corn root- and stalk-rot complex, 26
crotalaria wilt, 714
dill wilt and root rot, 19
bulbigenum var. niveum, 2
dianthi, carnation wilt, chemotherapeutants for, 11
control, 657
graminearum, in wheat seed microflora, 9
lycopersici, 398
chemotherapeutants for, 6, 11
moniliforme, 21
corn ear rot, 22
growth substance source, 26
on sorghum, 529
oxysporum, 945
on red clover, 7, 21
oxysporum batatas, 8, 564
wilt on sweet potato, control, 562
oxysporum gladiolii, 943
oxysporum lycopersici, tomato wilt, 16
pathogenicity of races 1 and 2, 238
oxysporum niveum, watermelon wilt, 38
oxysporum raphani, cause of radish wilt, 30
roseum, 546, 565, 945, 946
metabolism and conidium germination, 8
on red clover, 7, 21
respiration and fermentation, effect of tetramethylthiuram disulfide, 32
solani, 181, 675
on red clover, 21
solani **batatas** n.f., on sweet-potato sprouts, 75
solani moniliforme, wilt of red clover, 7
solani radicicola, 946
sp., cause of sweet-potato surface rot, 229
udum var. crotalariae, 720
Fusicladium pirinum var. pyracanthae, cause of Pyracantha scab, 560

GALE, GLENN, (1037)
GARBER, R. H., 991
GARDNER, M. W., (257)
Gelsemium sempervirens, 615
Genetics of microorganisms:
Glomerella, sexuality factors, 25
sexuality studies by use of C^{14}-labeled sucrose, 38

Hormodendrum resinae, variants in, 658
Sclerotium rolfsii, variability of strains, 251
Thielaviopsis basicola, mutation, 34
Tilletia, heterothallism and hybridization, 511
number of sporidia, 172
Ustilago, hybrids of U. hordei × U. bullata, 841
host range, 841
possibility of new species, 850
resemblance to U. avenae, 845, 849
spore characters, 842
Venturia inaequalis, gene pairs conditioning pathogenicity, 19
linkage groups, 4
Genetic factors for resistance (see also Inheritance of resistance):
in bean (Lima), for Lima-bean mosaic virus, 233
in cabbage, for clubroot, 37
in cucumber, for scab, 37
in Lycopersicon pimpinellifolium, for Fusarium, 240
in tomato, for spotted wilt virus, 259
Geranium dissectum, filaree red-leaf virus on, 224
GERDEMANN, J. W., 13, 238, 610
Gibberella fujikuroi, 530
zeae, on corn, 22, 26
GIBLER, JOHN W., 13, (21)
GIDDINGS, N. J., 415, 475
GILMER, R. M., 14
Gladiolus, corm curing and fungicidal dipping, 935
cormels, hot-water treatment, for Fusarium, 943
smut (Urocystis gladiolii), 941
viruses on: bean —, 5
cucumber mosaic —, yellow strain, 4
cucumber virus 1, 5
tobacco mosaic, 3
tobacco ringspot —, 3, 5
Gliocladium, 440
Gloeocladium roseum, 21
Gloeosporium, 938
Glomerella:
sexuality in, 25
tagged by C^{14}-labeled sucrose, 38
cingulata, 398, 565
in assay of antibiotic, 24
peach anthracnose, 449, 560
gossypii, 449
musarum, 449
Glycine max (see also Soybean), 224
GOLD, A. HERBERT, (648)
Gomphrena globosa, 435
local-lesion indicator plant for carnation mosaic virus, 945
potato X virus on, 18
GOODMAN, J. J., 14
GOPALKRISHNAN, K. S., 1065
GOTTLIEB, DAVID, 393, (420)
GOULD, CHARLES J., (40)
GRAHAM, FREDERICK, (1037)
GRAHAM, J. H., 14
GRAHAM, R. W., (764), (959)
GRAHAM, T. W., 14
GRANT, T. J., (105), 114
Grape (Vitis vinifera), 922
black rot (Guignardia bidwellii), control, 5
Botrytis cinerea rot on, 319
histology, 941
role of relative humidity, 859
Cladosporium storage rot, 937
Grass(es):
smut hybrids on, 838
bent, yellow tuft, nematodes associated, 566
GRAVATT, G. FLIPPO, 561
GRIES, GEORGE A., 15
GRIMM, GORDON R., 15
GROGAN, R. G., 939
GROSSO, J. G., (7)
GROVES, A. B., 561
Growth substances (see also Hormones):
from Fusarium moniliforme, 26
2,4-D (2,4-dichlorophenoxyacetic acid), effect on oats crown rust spores, 1039
effect on oats stem rust, 951
effect on soil microflora, 1037
spinach leaf malformation, 941
effect on wheat seedling blight, 1011
3-indole-acetic acid, effect on oats crown rust spores, 1039
GUBA, EMIL F., 657
Guignardia bidwellii, black rot of grape, control, 5
HAFIZ, ABDUL, 809
HAGEDORN, D. J., 15, 494, 813
HAMMACK, MARION, (935)
HANNON, C. I., 15
HANSON, CLARENCE H., (1)
HANSON, E. W., (15), (21), (813)
HARE, W. W., 16
HARRISON, A. L., 16, (415)
HARVEY, GEORGE M., (199)
HAVIS, A. L., (559)
Heat, for sweet-potato black rot, control, 943
HEBERT, T. T., (20)
Hedysarum coronarium, alfalfa witch's-broom virus on, 457
HEGGESTAD, H. E., (7)
HEIBERG, BARBARA C., (447)
HEINRICH, E. C., (944)
Helianthus annuus, crown gall, cellular autonomy, 963
Helicostylum sp., 5
Helminthosporium, crown and culm rot of oats caused by unidentified species, 11
identity of species causing black ear rot of corn, 378
avenae, 3
carbonum, cause of black ear rot of corn, 378
effect on corn yield, 36
oryzae, rice seedling blight, control, 8
sativum, 11
on barley, 691

on wheat, effect of 2,4-D, 1011
turcicum, 378
effect on corn yield, 36
resistance to, in Guatemalan corn, 34
victoriae, 11
as leaf spot on oats, 300
Heterodera marioni, control in tobacco soils, 657
tomato root knot, 16
rostochiensis, larval emigration from cysts, 889
in potato, control, 31
new Solanum hosts, 24
Heterosporium escholtziae, on California poppy, 937
HEUBERGER, J. W., 561
HEWITT, WM. B., (937), 939
Hibiscus esculentus (okra), 715
rosa-sinensis (Chinese hibiscus), Phytophthora foot rot, 19
HILBORN, M. T., 52
HILDEBRANDT, ALBERT C., 16
HOADLEY, A. D., 658
HOBART, O. F., JR., (12)
HOBBS, GORDON A., 16
HOLDEMAN, Q. L., (14), 17
HOLLIS, JOHN P., 17, 350
HOLLOMAN, ARTHUR, JR., 940
HOLMES, FRANCIS O., 17, 341
HOLSTON, E. M., 562
HOLTON, C. S., 172, 511, (567), 1035
HOOKER, ARTHUR L., 17
HOOKER, W. J., 17
HOPPE, PAUL E., 18, 747, 856
Hordeum (see also Barley), 841
vulgare, 376
Hordnia circellata, vector for Pierce's disease virus of grape, 920
Hormodendrum resinae, from creosoted wood, metabolism and physiology, 658
Hormones (see also Growth substances):
naphthalene acetic acid, abscission failure associated with Physalospora black rot of apple, 561
pentachlorophenoxyacetic acid, effect on Streptomyces scabies, 991
HORN, N. L., 18
HORNER, C. E., (938)
HORSFALL, JAMES G., 18, 658
Hot water, gladiolus cormel treatment, for Fusarium, 943
wheat treatment for loose smut, 875
HOUGAS, R. W., 483
HOUGH, L. F., (8), (32)
HOUSTON, BYRON R., 940, (942)
HOWARD, F. L., (12)
HOYMAN, WM. G., 18
HSIA, YU-TIEN, 1011
Humidity (see Moisture)
Hydrogen-ion concentration:
growth of: Sclerotinia sclerotiorum, 1100
Tilletia caries, 1117
relation to fungitoxicity of cyanamides, 2
role in Dutch elm disease, 12
Hyoscyamus niger (henbane), 347
HYRE, R. A., 562
IBRAHIM, I. A., 951
Ilex crenata, 615
Illinoia pisi (pea aphid), 495, 818
Inheritance of resistance (see also Genetic factors for resistance):
in barley, to spot blotch, 691
in cabbage, to mosaic, 1083
tobacco hybrids, reaction to mild strain of tobacco mosaic, 607
in tomato, to Verticillium wilt, 986
in tomato interspecific crosses, to tobacco mosaic virus, 944
Insecticides, role in dispersal of fungus spores, 152
Karathane (2-capryl-4,6-dinitrophenyl crotonate), for two-spotted spider mites on rose, 563
Systox spray, organic phosphate, for golden nematode control, 31
Insects (see also Insects as vectors):
leafhoppers, injected with corn stunt virus, 658
alfalfa —, on lespedeza, 2
aster —, serial passage of aster yellows virus through, 25
mealybug, pineapple wilt, feeding sequence related to, 769
mites (two-spotted spider —), on rose, control, 563
tomato white mold caused by, 563
spruce bark beetle, associated with Leptographium stain fungus, 560
thrips (Frankliniella fusca), related to Rhizoctonia soreshin of cotton, 854
Insects as vectors:
aphids, for bean virus 2, 495
for Brassica nigra virus, efficiency, 908
for citrus virus, 788, 790; quick decline —, 788; tristeza, —, 105
for filaree red-leaf virus, 223, 699
for teasel mosaic virus, 191, 192
for Wisconsin pea stunt virus and red clover vein-mosaic virus, 818
leafhoppers, for alfalfa witch's-broom virus, 456
for aster yellows virus on canna, 190
for beet curly-top virus, 936
for corn stunt virus, 833
for cranberry false blossom, 722
sharpshooters, for Pierce's disease virus of grape, 920
thrips, (?) for tobacco ringspot virus in eggplant, 211
Internal cork, of sweet potato, 28, 477
Ipomoea batatas (see also Sweet potato), 19
Iris, 379
bulb treatment for nematodes, 40
Irradiation, ultraviolet, for sporulation of Diaporthe phaseolorum batatatis, 332
JACKSON, THOMAS L., (1035)
JACOWAY, T. H., 19
JAMES, M. O., 19
JANSON, B. F., 19

Jasminum nudiflorum (winter jasmine), 379
JEFFERS, W. F., 562, (562)
JEHLE, R. A., 562
JENKINS, ANNA E., (3), (562)
JENSEN, D. D., 401, 648
JENSEN, J. H., (185)
Jimsonweed (Datura stramonium), potato yellow dwarf virus on, 490
JOHNSON, HOWARD W., 19
JOHNSON, JAMES, (11), (12), 78, (1001)
JORGENSEN, HANS, (231), (566)
Juniperus horizontalis (creeping juniper), 380
virginiana (red cedar), 379

KEITT, G. W., 19, (23)
KELLER, JOHN R., 947
KELMAN, ARTHUR, 20, 185
KENDRICK, J. B., JR., 20, 940, (941)
KENKNIGHT, GLENN, 20, 829
KEPLINGER, J. A., (21)
KERNKAMP, M. F., 21
Kerria japonica (Japanese kerria), 380
KEVORKIAN, ARTHUR G., 562, 563
KILPATRICK, R. A., 21
KING, T. H., (5), 21
KIRKPATRICK, H. C., (897)
KLOMPARENS, WILLIAM, 22
KLOSTERMEYER, E. C., 456
KLOTZ, L. J., (946)
Kochia scoparia, 377
KOEHLER, BENJAMIN, 22
KOMMEDAHL, T., 22
KOTILA, J. E., (559)
KREITLOW, K. W., 553, 567, 752
KUNKEL, L. O., 22
KUNTZ, J. E., (2), 23
KUSHMAN, L. J., (801)

LACKEY, C. F., 418, 940
Lagerstroemia indica, 615
LAMBERT, E. B., 563
LARSON, R. H., 23, (37)
LATHROP, F. H., (52)
Lathyrus spp., as hosts for alfalfa witch's-broom virus, 457
odoratus, 224, 817
LAYTON, KENNETH, (146)
LEACH, J. G., 23, 1041
Leaf spot, on cherry, control, 12, 466
peach anthracnose, 560
Stemphylium —, on tomato, 15
LEBEAU, F. J., 378
LEBEN, CURT, 23
Legumes, alfalfa witch's-broom virus on, 456
Lemon (see also Citrus limon):
budlings, shell bark on, 936
Lenticels, role in Botrytis rot of grape, 320
Leptographium, associated with spruce bark beetle, 560
Lespedeza stipulacea, Rhizoctonia solani on, 2
Sclerotium rolfsii on, 2
Stictocephala festina (alfalfa hopper) on, 2
striata, Sclerotium rolfsii on, 2
Lettuce, 190
mildew, downy, 945
mosaic-free seed, 939
LEVINE, MOSES N., (736)
LEWIS, C. E., (560)
LEWIS, F. H., 24
Light, effect on cranberry leafhopper, 724
role in Dutch elm disease on seedlings, 47
for germination of Physoderma sporangia, 20
role in infectivity of tobacco mosaic virus strains, on Nicotiana sylvestris, 585
on Nicotiana plumbaginifolia, 588
role in modification of little-cherry virus symptoms, 136
for sporulation of: Diaporthe phaseolorum batatatis, 332
Septoria nodorum, 575
ultraviolet, effect on spore germination, 35
ultraviolet absorption, measure of virus nucleoprotein, 142
virus transmission (mechanical), potato yellow dwarf, 487, 489
Ligustrum lucidum, 615
Lilium longiflorum, rosette virus on, anatomy, 66
LILLY, VIRGIL GREENE, (327)
Lily (see also Lilium):
Botrytis on, 941
virus on: rosette, 66
Easter —, Colletotrichum on, 29
LIMING, O. N., 146
LINDNER, R. C., 897
Linum usitatissimum, 377
Listerella monocytogenes, 398
LIVINGSTON, J. E., 24
LOEGERING, W. Q., (33), 56
Lotus corniculatus, 1, 457
uliginosus, 1
LOWNSBERY, B. F., 24, 889
LOWNSBERY, J. W., (24)
LOWTHER, C. V., (172)
Lycium, local-lesion host for potato Y virus, 23
Lycopersicon chilense, 349
esculentum (see also Tomato), 24, 224, 817
early blight (Alternaria solani), air temperature and incidence, 127
Trichothecium fruit rot, 9
esculentum × hirsutum, reaction to tobacco mosaic virus, 944
hirsutum, 349
pimpinellifolium, reaction to races of Fusarium oxysporum f. lycopersici, 239
hybrid with L. esculentum, reactions to races of Fusarium oxysporum f. lycopersici, 239
Lysis, in smut fungi, 842, 844
Lythrum salicaria roseum (rose-colored lythrum), 380
Lupine, role in peach anthracnose, 561

MACLEAN, NEIL ALLAN, 941
Macrophomina phaseoli, 529
Macrosiphum ambrosiae, 111
geranicola, aphid vector for filaree red-leaf virus, 699
retention of virus, 223
pelargonii, vector for filaree virus, 699
rosae, vector for teasel virus, 191
solanifolii, 111
aphid vector for filaree red-leaf virus, 223
Macrosporium sarcinaeforme, 398
Macrosteles divisus (aster leafhopper), 190
obtaining saliva from, for virus study, 1127
serial passage of aster yellows virus through, 25
MAI, W. F., (24), 24
Malus atrosanguinea, reaction to Venturia, 32
sieboldi (Toringo crabapple), 380
sikkimensis, reaction to Venturia, 32
Manganese, in peach infested with root-knot nematode, 559
MARAMOROSCH, KARL, 25, 658, 833, (1126)
MARCUS, C. P., (10)
Marketing, decay of peaches in transit, 452
Marmor cucumeris var. phaseoli, Lima-bean mosaic virus, 231
dipsacum n. sp., teasel mosaic virus, 193
medicaginis, alfalfa mosaic virus, 433
var. **phaseoli** n. var., bean yellow dot virus, 973
sacchari, sugar-cane mosaic virus, 758
tabaci, tobacco mosaic virus, 433
geographic origin, 341
var. **rosettae** n. var., cause of tomato rosette, 1096
upsilon, potato Y virus, 431
MARSDEN, DAVID H., 658
MARSHALL, BARTON H., JR., (565)
MARTIN, W. J., 228
MASON, CLARENCE T., 164
MASON, CURTIS L., 25
Mathiola incana, 224
var. annua (stock), 908
MCCLAIN, R. L., (936)
MCCLELLAN, W. D., 563
MCCLELLAN, WILBUR D., (565)
MCCLURE, T. T., 72
MCDONOUGH, E. S., 25, 196
MCGAHEN, J. W., 25
MCKEEN, C. D., 26
MCKEEN, W. E., 26
MCKINNEY, H. H., 563, (564)
MCWHORTER, F. P., 66, 185, (942)
Medicago spp., as hosts for alfalfa witch's-broom virus, 457
sativa (see also Alfalfa), 224, 376, 817, 922
seed treatment, 13, 21, 610
Melampsora lini, 3
Melanin, production by Streptomyces scabies, 17
MELHUS, I. E., (34)
Melilotus alba (white sweet clover), 376, 817
as host for alfalfa witch's-broom virus, 457
seed treatment, 610
officinalis (yellow sweet clover), 377
Meloidogyne spp. (root-knot nematodes), on snapdragon, 566
on tobacco and cotton, 14
technique for single egg-mass inoculation, 564
incognita, on peach, 559
on tobacco, 31
acrita, on soybean, 562
javanica, on peach, 559
MENZIES, J. D., (456)
Mercury, in narcissus after bulb treatment, 565
MICHAEL, RALPH, (943)
MICHAELSON, MERLE E., 26
Microflora, of wheat seed, 9
Microsporium audouini, 398
canis, 398
MIDDLETON, JOHN T., (940), 941
MILBRATH, J. A., (945)
Mildew, on onion, control, 28
downy, on barley, 942
on Lima bean, 566
powdery, on barley, 622
on cherry, control, 12
on rose, control, 563
on wheat, 622
MILLS, W. D., 466
Milo, root rot, relation of Periconia circinata, 28
Mineral elements, in narcissus after fungicidal bulb treatments, 566
MINGA, AUDREY E., (164)
Mint, rust, epiphytotic in Northwest, 938
on peppermint and spearmint, control, 27
MITCHELL, J. E., 26
Moisture, aluminum foil for moist chambers, 658
atmospheric, centrifugal drying of spinach to control soft rot, 712
for Botrytis rot of grape, 324, 859
for carnation anther smut, 295
for snapdragon rust, 541
of soil, relation to carnation anther smut, 295
relation to infectivity of Sclerotium rolfsii, 249
Monilinia fructicola, spore germination and ultraviolet light, 35
Monilochaetes infuscans, scurf of sweet potato, 562, 564
MOORE, J. DUAIN, 27, (36)
MOORE, J. E., (562), 564
MORGAN, O. D., 564
MOWRY, JAMES B., 27
Mucor, 945
mucedo, 5
MUNNECKE, DONALD E., 27
MURAKISHI, HARRY H., 305

MURPHY, H. C., (31)
Mushrooms, pasteurization of beds, 563
Muskmelon, Fusarium wilt, 26
Mycobacterium tuberculosis, 398
Mycoderma cerviseae, 398
Mycosphaerella brassicicola, on cabbage, 826
Myzus ornatus, 223
  persicae (green peach aphid), 11, 20, 223, 908
    vector for teasel mosaic virus, 192
  solani, aphid vector for filaree red-leaf virus, 223

Naphthalene acetic acid, 561
Narcissus, chemical elements in plants after fungicidal bulb treatment, 565
NEAL, D. C., 854
Necrosis, of lily rosette virosis, 67
Nectria galligena, 8
NEERGAARD, PAUL, 1021
NELSON, K. E., 319, 859, (937), 941
NELSON, RAY, 27, 28
Nematodes:
    on alfalfa, 189
    on bent grass, yellow-tuft association, 566
    on iris bulbs, control, 40
    on peppers, resistance to, 16
    on potato, 24
      effect of cropping history, 24
    on Vanda orchid, yellow bud blight, 938
  golden — (Heterodera rostochiensis), larval emigrations from cysts, 889
    in potato, control, 31
    new Solanum hosts, 24
  meadow, chemical soil treatments, 123
    control in tobacco soils, 657
    in tobacco, effect of crop rotations, 31
  potato rot —, on sugar beet, 872
  root-knot —, on cantaloupe, control, 560
    control in tobacco soils, 657
    on peach, 559
    on snapdragon, 566
    on soybean, 562
    technique for egg-mass inoculation, 564
    in tobacco, effect of crop rotations, 31
    in tobacco and cotton, 14
  root rot —, of tobacco, 34
    in tobacco and cotton, 14
  sting — (Belonolaimus gracilis), on peanut, 29
Nerium oleander, 615
NEWHALL, A. G., 28, (1021)
NEWSOM, L. D., (854)
NICHOLS, CARL W., 941
Nicotiana hybrids, tobacco mosaic on, 593
Nicotiana alata, 597
  glauca, 20
  glutinosa, 20, 224, 435, 597
    cabbage black-ring virus on, 945
  longiflora, 597
    breeding material for wildfire resistance, 7
    wildfire bacteria in leaves of, 10
  plumbaginifolia, tobacco mosaic strains on, 587
  rustica, potato yellow dwarf virus, mechanical transmission to, 486
    test plant for potato yellow dwarf virus, 213
  sylvestris, 597
    reinfection of mosaic leaves, 13
    tobacco mosaic strains on, 582
  tabacum (see also Tobacco), 33, 224, 235, 435, 817
    methods of virus extractions from leaf tissue, 903
    tobacco mosaic strains on, 597
    wildfire bacteria in leaves of, 10
    wildfire resistance, 7
  tomentosa, 597
  tomentosiformis, 597
Nicotiana spp., relation to tobacco mosaic virus, 342
    hypersensitivity, 342
    partial immunity, 343
    tolerance, 345
    virus reservoirs, 343, 346
NIELSEN, L. W., 28
Nigrospora oryzae, corn ear rot, 22
Nu-Film, adhesive for fungicides, 12
Nutrition:
    basal medium for Septoria nodorum sporulation, 572
    effect on: Phytophthora infection of pineapple, 2
      tomato infected with tobacco mosaic virus, 940
    fertilizer effect on meadow nematodes, 125
    host —, role for cucumber bacterial wilt, 38
      role for watermelon fusarium wilt, 38
  carbon, carbohydrate related to spore germination of Fusarium, 8
    related to vitamins used by Diaporthe phaseolorum batatatis, 329
    source for Septoria nodorum sporulation, 574
  mineral —, growth of Sclerotinia sclerotiorum, 1100
  nitrogen, coal tar and creosote as source for Hormodendrum resinae, 658
    for Diaporthe phaseolorum batatatis, 330
    source for: Septoria nodorum sporulation, 573
      Tilletia caries, 1120
    for wilts of cucumber and watermelon, 38
    urea, effect on meadow nematodes, 125
    sensitivity of Sclerotinia sclerotiorum, 1101
  nitrogen deficiency, effect on: infectivity, 236; tobacco mosaic virus properties, 235; virus particle size, 236
  organic acids, for crown-gall tissue culture, 16

phosphorus, for wilts of cucumber and watermelon, 38
potassium, for wilts of cucumber and watermelon, 38
potassium deficiency, chlorosis of soybean, 7
vitamins, for Diaporthe phaseolorum batatatis, 329
growth of Tilletia caries, 1123
NYLAND, GEORGE, 942

Oak (see also Quercus):
translocation of poisons and dyes, 2
wilt, caused by Chalara quercina, 659
control, 23
local spread, 30
surveys, 561
bur — (Quercus macrocarpa), Strumella canker, 101
Oats, crown and culm rot (Helminthosporium), 11
crown rust, effect of 3-indole-acetic acid, 1039
race new to U. S., 31
races in Canada, 29
Helminthosporium victoriae, as leaf spot, 300
seedling blight (Rhizoctonia solani), 376
stem rust, effect of 2,4-D, 951
race 7, 33
Odontoglossum grande, virus ring spot, 648
Omphalia flavida, on coffee, control by defoliation of trees, 38
Onion, mildew, control, 28
smut, control, 28
Onobrychis transcaucasica, 457
viciafolia, 457
Orange, Alternaria black rot, 7
sour (Citrus aurantium), 106
sweet (Citrus sinensis), 106
Orchid (see also Cymbidium, Odontoglossum, and Vanda):
blossom rot in transit, control, 938
environment and fungal complex, 938
nematode yellow bud blight, 938
viruses on: black streak —, 401
mosaic —, 401
ringspot —, 648
OSWALD, JOHN W., 28, 29, (940), 942, (1034)
Overwintering, bacterial pathogens of soybean, 14
cucumber mosaic virus, 12, 1001
OWEN, J. H., (7), (19)
OWENS, JOHN V., 29
OWENS, R. G., 123

Paeonia officinalis (common peony), 379
PAGE, O. T., (17)
PALMITER, D. H., 659
Panagrolaimus rigidus (nematode), associated with yellow tuft of bent grass, 566
Panicum purpurascens, 770
PARKER, K. G., (661), 942
Pasteurization, of mushroom beds, 563
for sweet-potato black rot control, 801
PATERSON, J. C., (245)
Pea (see also Pisum sativum):
seed treatment, dry and slurry methods, 10
in South America, 272
viruses on: bean virus 2, 15, 494
pea stunt —, 15, 813
red clover vein mosaic —, 15
Peach (Prunus persicae):
anthracnose (Glomerella cingulata), 447, 560
bacterial spot, control, 25
Coryneum blight and leaf curl, control, 938
flower breaking patterns caused by ringspot virus, 936
nematode on, 559
seedlings inoculated with Xanthomonas pruni, 8
test for phony disease, 20, 829
virus on: leaf roll, 942
Peanut, collar rot, heat canker, 4
Diplodia stem rot, 19
nematodes on, 29
seed treatment, in South America, 371
Pear hybrids, fireblight on, 6
Pelargonium hortorum, 224
Penicillium notatum, 565
solitum, lipolytic activity, 14
PENTEADO, M. P., (758)
Pepper (see also Capsicum):
nematode resistance in, 16
viruses on: cucumber mosaic strains, 20; curly top —, 20; spotted wilt —, 20; tobacco mosaic virus 1, 20
Periconia circinata, relation to milo root rot, 28
PERSON, L. H., (228)
PETERSEN, D. H., (560)
PETURSON, B., 29, 1039
Petunia hybrida, 347
Phaseolus limensis (Lima bean), 9
lunatus, 490
vulgaris, 224, 435, 817
Philadelphus sp. (mockorange), 380
Phoma sp., 21
lingam, strains transmitted in cabbage seed, 824
Phomopsis, eggplant blight, 9
Phosphate, effect in virus inoculations, 945
Phycomycetes, from roots of littleleaf-infected pine, 443
Phymatotrichum, root rot, control by crop rotations in irrigated lands, 944
Physalis floridana, ethylene from virus-infected —, 431
peruviana, local-lesion host for potato Y virus, 23
Physalospora obtusa, black rot of apple, 459
association with abscission failure after sprays with growth-regulating chemical, 561
cytology, 460
tucumanensis, on sugar cane, development in apparently healthy tissues, 522

Physiologic specialization:
cucumber mosaic virus, strains, 11
curly-top virus strains, 935
Fusarium oxysporum f. lycopersici, 238
nematodes (Ditylenchus) on alfalfa, 189
Puccinia coronata, new race, 31
races prevalent in Canada, 29
Puccinia graminis tritici, survival of races, 56
Puccinia rubigovera tritici, races in Uruguay, 737
Thielaviopsis basicola, 34
Tilletia caries, 7
foetida, 7
tobacco mosaic virus strains, 935
on Nicotiana sylvestris, 13
tristeza virus of citrus, 114
Urocystis tritici, 809
Ustilago avenae, 7
hordei, 7
kolleri, 7
nigra, 7
from U. S. and Israel, 140
nuda, 7
tritici, 7
Physiological disease, cacao hollow heart, 656
soybean chlorosis, K deficiency, 7
Physiology of microorganisms:
carbon disulfide, released from tetramethylthiuram disulfide by fungi, 565
lipolytic activity, Aspergillus and Penicillium, 14
Alternaria solani, temperature effect on growth and spore germination, 128
Aspergillus niger, conidial germination, 943
Ceratostomella ulmi, pH, polysaccharides, and toxin titer, 12
Coniothyrium fuckelii, tolerance to copper, 21
Diaporthe phaseolorum batatatis, growth and sporulation, 327
Fusarium roseum, respiration and fermentation, effect of tetramethylthiuramdisulfide, 32
Fusarium roseum and F. oxysporum f. batatas, metabolic change in germinating conidia, 8
Hormodendrum resinae, coal tar and creosote as N sources, 658
Phytophthora phaseoli, 562
Puccinia graminis tritici, urediospore germination in wheat juices, 27
Sclerotinia sclerotiorum, 1099
Sclerotinia trifoliorum, growth of monoascospore isolates, temperature effect, 757
Sclerotium rolfsii, survival in seed and soil, 246, 250
infectivity factors, 248
perfect stage in culture, 254
strain variability, 251
Septoria nodorum, carbon sources, 574
nitrogen sources, 574
Streptomyces scabies, growth inhibited by Al ions, 15
melanin production, 17
Physocarpus opulifolius (common ninebark), 380
Physoderma graminis, on Agropyron repens, 1065
zeae-maydis, 1066
light and sporangium germination, 20
Phytomonas caryophylli, carnation wilt, control, 657
Phytophthora cactorum var. applanata, hibiscus foot rot, 19
capsici, tomato collar rot, 937
cinnamomi, on cinchona, 641
detection in soil, 187
in Hawaiian pineapple fields, 1
parasitized by Rhizoctonia, 5
pineapple root infection and nutrient salt concentration, 2
from roots of littleleaf-infected pine, 444
in soil of southern pine stands, 5, 742
fragariae, strawberry red stele, 858
chemotherapy, 34
infestans, potato late blight, 36, 37
tomato late blight, 36, 37
lateralis, cypress root rot, 944
parasitica, on cinchona, 641
on Daphne odora, 654
cause of tomato root rot, 13, 99
phaseoli, bean downy mildew, 562, 566
Pine:
littleleaf disease, 6, 746
loblolly (Pinus taeda), 744
longleaf (Pinus palustris), 744
ponderosa, fluorine injury, 943
shortleaf (see Pinus echinata), 439, 742
slash (Pinus caribaea), 744
Rhizoctonia damping-off, control, 4
Western white (Pinus monticola), pole blight, 199
white, blister rust resistance, wound periderm formation, 276
Pineapple, mealybug wilt, 769
Phytophthora cinnamomi, in Hawaiian soils, 1
root infection and nutrient salt concentration, 2
Pinus caribaea (slash pine), Rhizoctonia damping-off in seedlings, control, 4
echinata, littleleaf, root fungi, Phytophthora, 439, 742
monticola (Western white pine), 199
Picea engelmanni (see Spruce, Engelmann), 560
Pisum sativum (see also Pea), 224, 431, 817
Pittosporum tobira, 615
PLAKIDAS, A. G., (19), 29
Plantago major, 224
POLLARD, ERNEST, 659
Polygonum auberti (China fleecevine), 380
Polyporus hispidus, black ash heart rot, 569

Polysaccharides, wilt-inducing —, from bacteria, 804
PONTIS, RAFAEL E., 178
Poplar, disease of unknown cause, in Europe, 561
POPP, W., 261
Poppy, California, Heterosporium disease, 937
PORTER, CLARK A., 942
PORTER, R. HOWARD, 367
Poria cocos, 442
  microspora, 22
Potato (see also Solanum tuberosum):
  early blight, control, 562
  healthy tissues containing bacteria, 350
    seedlings, 360
    seed pieces, 353, 356, 358, 360
    stems, 353
    tubers, 353, 356, 358
    in xylem and phloem, 358
  late blight, 37
    control, 562
    forecasting, 37
    infection gradients with artificial inoculation, 36, 37
    plant temperatures, 36
  nematodes on, effect of cropping history, 24
  nematode (golden) in, control, 31
  scab, control, 29
    effect of soluble Al ions, 15
    tuber growth, 17
  sets, chemical effect on healing, 1077
  storage temperature, relation to decay, weight loss, and surface browning, 565
  viruses on: interveinal mosaic —, 564
    potato yellow dwarf —, transmission (mechanical) in sap, 489
    X virus, 18
Potassium, in peach infested with root-knot nematode, 559
Potassium cyanide, inhibition of virus symptoms, 23
POUND, GLENN S., 30, 127, 820, 1083, 1104
PRATT, ROBERT M., (568)
Pratylenchus spp., nematode root rot, on cotton and tobacco, 14
    in potato, 24
    in tobacco, 31
  leiocephalus, 125
  pratensis, control in tobacco soils, 657
Predisposition, of cereals to powdery mildew, 629
  of wheat to seedling blight, effect of 2,4-D, 1014
PRICE, W. C., 1091
Prunus species, varieties, and hybrids, Coccomyces inoculations, 27
  cistena, indexing host for cherry ring spot virus, 480
  domestica, carrier of X-disease virus, 14
  dunbari, X-disease virus on, 14
  glandulosa (flowering almond), 379
    X-disease virus on, 14
  maackii, X-disease virus on, 14
  maritima, X-disease virus on, 14
  padus, X-disease virus on, 14
  pennsylvanica, carrier of X-disease virus, 14
  persica, indexing host for cherry viruses, 480
    var. duplex (double-flowering peach), 380
  pumila, X-disease virus on, 14
  serotina, immunity from X-disease virus, 14
  tomentosa, indexing host for cherry viruses, 489
    X-disease virus on, 14
  triloba (double flowering plum), 379
Pseudococcus brevipes (mealybug), 769
Pseudomonas aeruginosa, 398
  glycinea, soybean bacterial blight, 6
    overwintering, 14
  lachrymans, cucumber angular leaf spot, 38
    in cucumber fruits and seeds, 1059
  marginalis, on chicory, 880
  phaseolicola, 186
    var. medicaginis, 362
  solanacearum, virulence maintained by oil cover on cultures, 186
  tabaci, soybean wildfire, 362
    overwintering, 14
Puccinia antirrhini, 155, 157
    climate and control, 536
  coronata, races prevalent in Canada, 29
    avenae, effect of 2,4-D, 1039
      effect of 3-indole-acetic acid, 1039
  graminis avenae, 3
      effect of 2,4-D, 951
      race 7, 33
  graminis tritici, cytology of development, 15
      race 15B, 33
      survival of races, 56
      urediospore germination in wheat juices, 27
  menthae, mint rust, 27, 938
  rubigovera tritici, on wheat in Uruguay, 736
Pyrus serotina, 6
  ussuriensis, 6
Pythium spp., on red clover, 21
  aphanidermatum, stem rot and barn rot of tobacco, 17
  arrhenomanes, 25
    on corn, 26
    on milo, 29
  debaryanum, corn resistance to, embryo as factor, 17
    on corn in cold soil, 747
  ultimum, 944
    on corn in cold soil, 747
Pyracantha coccinea, Fusicladium pirinum scab, control and overwintering, 560
  formosana, 615

Quercus:
    European species susceptible to Endothia parasitica, 561
  macrocarpa, Strumella canker, 101

RAABE, R. D., (820)
Radiation, gamma —, to suppress tomato crown gall, 10
Radioactive elements, iodine, translocation in oak, 2
Radioactivity, C^{14}-labeled sucrose, for tagging fungus mycelium, 38
of phosphorus, used to determine distribution of bacteria in host plant, 796
Radish, Fusarium wilt, 30
RAMSEY, G. B., 447
RAWSON, A. J., (282)
Reducing agents, cysteine hydrochloride, in virus transmission (mechanical), of potato yellow dwarf, 487
Report(s), American Phytopathological Society (and Divisions) (see under American)
Resyn Adhesives 3024 and 3605, 12
REX, EDGAR G., (146), 659
Rhizoctonia, parasitic on Phycomycetes, 5
Rhizoctonia spp., 21
ramicola n. sp., on Elaeagnus, 618
solani, 2, 398, 945
carnation wilt, control, 657
cotton soreshin, associated with tobacco thrip injury, 854
damping-off in slash pine, control, 4
on lespedeza, 2
Lima-bean root rot, 20
lotus inoculations, 1
oat seedling blight, 376
on soybean, 13, 21
turf brown patch caused by, 657
wheat plumule blight, 375
Rhizopus nigricans, parasitized by Rhizoctonia, 5
Rhododendron indicum, 615
Rhopalosiphum prunifoliae, vector for filaree virus, 705
pseudobrassicae (false cabbage aphid), 908
Rice, Helminthosporium seedling blight, control, 8
seed treatment in South America, 370
RICH, SAUL, (18), 30, (911)
RICHARDS, GERALD S., 571
RIKER, A. J., (23), 30, (276)
ROBERTS, DANIEL A., 31, (615)
RODENHISER, H. A., 567
ROISTACHER, CHESTER N., 943
Root knot, nematode —, in cotton and tobacco, 14
in tomato, 16
Root rot, of corn, 26
of milo, relation of Periconia circinata, 28
nematode —, in cotton and tobacco, 14
Phymatotrichum —, in irrigated lands, 944
Phytophthora —, of Chamaecyparis, 944
Rhizoctonia —, on Lima bean, 20
on soybean, 13, 21
of tomato, caused by Phytophthora, 13, 99
white —, on ornamentals, 379
Rosa moschata (musk rose), 380
Rose, callus, relation to productivity, 196
mildew, powdery, control, 563
mites (two-spotted spider —), control, 563
Verticillium on, 781
ROSEN, H. R., 31
ROSENBERG, DAN Y., 943
ROSS, A. FRANK, 31, (31), 431
Rostrella coffeae, similarity to Ceratostomella, 183
Rot(s), ash (black) heart —, 569
cereal crown —, caused by Rhizoctonia solani, 375
clover root — and crown —, 21
dill root —, caused by Fusarium, 19
hibiscus foot —, caused by Phytophthora, 19
oats crown — and culm —, caused by Helminthosporium, 11
peanut stem —, caused by Diplodia, 19
Phytophthora stem — and root —, on Daphne odora, 654
red —, on sugar cane, 522
sorghum stalk —, caused by Fusarium moniliforme, 529
tobacco barn — and stem —, caused by Pythium, 17
tomato collar —, caused by Alternaria, 16
fruit —, caused by Trichothecium, 9, 633
Rubus idaeus (raspberry), Erwinia amylovora f. rubi as cause of bacterial fireblight, 919
RUMLEY, GAIL E., 301
Rust, on bean, water-soaking effect, 937
cereal, race identification, use of cyclone separator in, 286
of mint, 27, 938
oats crown —, new race, 31
races prevalent in Canada, 29
oats stem —, race 7, 33
snapdragon —, climate and control, 536
wheat leaf —, 736
wheat stem —, race 15B, 33
study of infection types, 3
survival of races, 56
white pine blister —, 276
Rye, seed treatment in South America, 369
SANFORD, G. B., 1077
SASSER, J. N., 31, 564
SAXON, R. B., (282)
Scab, cucumber resistant to, 37
of potato, 15
Scabiosa atropurpurea, teasel mosaic virus on, 193
Scaphytopius (Cloanthanus) dubius, leafhopper vector of alfalfa witch's-broom virus, 456
SCHAAL, L. A., (991)
SCHAIBLE, LESTER, 986
SCHEFFER, R. P., (38)
Schizophyllum commune, growth inhibition by tree extracts, 25
SCHNEIDER, E. O., (7)

SCHOLZ, JOHN J., (1)
SCHROEDER, W. T., (28), 660
SCHULTZ, E. S., 564, (567)
Scleroracus vaccinii, leafhopper vector of cranberry false blossom, 722
Sclerotinia, 657
  specificity of toxicants, 658
  fructicola, 398
    copper toxicity reversed by sulfhydryl compounds, 39
  sclerotiorum, 2
    physiology of, 1099
  trifoliorum, alfalfa inoculations, 1
    dried grain inoculum, 553
    on legumes, 752
Sclerotium bataticola, on lespedeza, 2
  rolfsii, on lespedeza, 2
    physiology and parasitism, 245
Scolytus multistriatus, 146
Seed injury, corn, 749
Seed transmission, blackpatch of red clover, 23
  of cabbage pathogens: Alternaria brassicicola, 823; Phoma lingam, 822; Sclerotinia sclerotiorum, 823
Seed treatment:
    dry vs. slurry method, Ceresan M and pea varieties, 10
    hot-water, for soybean purple seed stain, 316
    alfalfa and clover, 610
  alfalfa, red clover, and sweet clover, 21
  cereals and vegetables in South America, 367
  corn, 748
  forage legumes (alfalfa, red clover, sweet clover), in wet and dry soils, 13
  rice, for Helminthosporium seedling blight, 8
  soybean, 19
SEMENIUK, G., (34)
Septoria nodorum, sporulation of, 571
  obesa, 152
SHARP, D. G., 94
SHAW, CHARLES GARDNER, (854), 943
SHAW, R. H., (36)
SHAY, J. R., 32
SHERBAKOFF, C. D., 378
SHERWIN, HELEN S., 565
SILBER, G., (657)
Silene antirrhina, 294
SILL, WEBSTER H., JR., 32
SIMINOFF, PAUL, 420
SIMONS, JOHN N., (908)
Sisal, red rot, 766
SISLER, H. D., (8), 32, 565
SMITH, FLOYD F., 190, (563)
SMITH, F. O., 32
SMITH, M. A., (447)
SMITH, OLIVER F., 189
SMITH, PAUL G., 257, 943
SMITH, WILSON L., JR., 565
SMOCK, R. M., (659)
SMOOT, JOHN J., 565
Smuts, barley loose —, in seeds, seedlings, and adult plants, 261
    races from U. S. and Israel, 139
  carnation anther —, 291
  of cereals, 7
  Entyloma ellisii on spinach, 854
  of gladiolus, 941
  hybridization, induced in Ustilago hordei × U. bullata, 839
  of onion, control, 28
  wheat bunt, 511, 1115
  wheat dwarf bunt, 1035
  wheat flag —, 1035
    physiologic races, 809
  wheat loose —, in seeds, seedlings, and adult plants, 261
Snapdragon (Antirrhinum majus), nematodes on, 566
SNYDER, WILLIAM C., (939)
Sodium azide, inhibition of virus symptoms, 23
Soil, survival of Sclerotium rolfsii in, 250
Soil amendments, effect on Actinomycetes in sugar-cane soil, 25
  effect on Verticillium inoculum, 684
Soil fumigants:
  allyl compounds: acetate, alcohol, bromide, chloride, and formate, 939
  ammonium hydrosulfide, 939
  carbon disulfide, 939
  chlorobromopropene (Shell CBP-55), 939
  chloropicrin, 939
    control of white root rot (Corticium galactinum) of ornamentals, 379
    for meadow nematodes, 124
  DD (dichloropropene-dichloropropane mix), for cantaloupe root-knot nematode, 560
    for meadow nematodes, 124
    for tobacco nematodes, 657
  ethylene dibromide, 939
    for meadow nematodes, 124
    for tobacco nematodes, 657
  formaldehyde, 939
  Iscobrome D (23 per cent ethylene dibromide), for cantaloupe root-knot nematode, 560
  isocapronic acid, 939
  methlol, 939
  nitroethane, 939
  nitromethane, 939
  o-chlorophenol, 939
  pentachlorethane, 939
  propylene bromide, 939
  propylene oxide, 939
  tetra chlorethane, 939
  tetra chloroethylene, 939
Soil fumigation, effect on activity of Trichoderma in citrus soils, 665
Soil microflora, dominance of an actinomycete after 2,4-D, 1037
  Fusarium, effect on Armillaria in citrus soils, 675
  Trichoderma, effect on Armillaria in citrus soils, 674
Soil moisture, relation to: barley powdery mildew, 624
  legume seed treatment, 610

wheat powdery mildew, 625
Soil pasteurization, 28
Soja max (see also Soybean), 715, 817
Solanum capsicastrum (Jerusalem cherry), 457
duleamara, 24
integrifolium, new host for golden nematode, 24
melongena (eggplant), 347
nigrum (huckleberry), 20, 347
tuberosum (see also Potato), 347, 435
xantii, new host for golden nematode, 24
Sophora japonica (Chinese scholartree), 380
Sorghum vulgare, 376, 758
Colletotrichum on, inoculation technique, 378
Fusarium stalk rot, 529
seed treatment in South America, 371
Soybean (see also Glycine max; Soja max), 327
bacterial blight resistance, 6
bacterial pathogens, overwintering, 14
Cercospora sojina and seed discoloration, 565
Cercosporina kikuchii, cause of purple seed stain, 310
chlorosis, K deficiency, 7
Colletotrichum truncatum on, 975
delayed sporulation, 35
Fusarium on, 717
nematode root knot, 562
resistance to Rhizoctonia root rot, 21
seed pelleted with fungicide, 13
seed treatment, 19
SPECHT, A. W., (559), 565
SPENCER, J. L., 291
Spicaria elegans, 529
Spinach (Spinacia oleracea), bacterial soft rot, control, 709
Entyloma ellisii, smut, 854
leaf malformation caused by 2,4-D, 941
Spinacia oleracea (see also Spinach), 224
Spiraea nipponica (Nippon spirea), 380
prunifolia (bridalwreath spirea), 380
thunbergii (Thunberg spirea), 379
Spore dispersal, by fungicides, 157
by insecticides, 152
Sporulation, in Diaporthe phaseolorum batatatis, 327
in Septoria nodorum, 575
SPRAGUE, V. G., (752)
Spruce, Engelmann, bark beetle associated with Leptographium stain fungus, 560
Norway, disease of unknown cause, in Europe, 561
STAHMANN, MARK A., (30), (1104)
STAKMAN, E. C., 33
Stalk rots, in corn, 26
STANTON, W. R., 476
Staphylococcus aureus, 398
STARR, MORTIMER P., 915
STEENLAND, A. P., (938)
STEERE, RUSSELL L., 33
STEIB, R. J., (37), 522
Stemphylium, 657, 945
specificity of toxicants, 658
radicinum, on carrot, 939
solani, 658
sp., cause of tomato leaf spot, 15
STESSEL, G. J., (23), 33
STEVENSON, F. J., 567
STEWART, DONALD M., 569
Stictocephala festina (alfalfa hopper), on lespedeza, 2
STODDARD, E. M., 33, 34, 337, 858, (911)
STONER, WARREN N., 191
Storage rot, sweet-potato, Fusarium surface rot, 228
internal cork, temperature effects, 477
Storage temperature, for potatoes, relation to decay, weight loss, and surface browning, 565
STOVER, R. H., 34, 1125
Strawberry, foliar variegation, viruslike particles in, 35
Phytophthora fragariae red stele disease, control by chemotherapy, 34, 858
Verticillium wilt, 4
viruses indexed on Fragaria vesca, 10
STREETS, R. B., 944
Streptococcus faecalis, 398
Streptomyces, endomycin (antibiotic) from, 393
strains pathogenic on sweet potato, 565
griseus, 421
ipomoea, 564
scabies (Actinomyces scabies), antibiotic potentialities, 1034
control, 29
growth inhibited by Al ions, 15
melanin production, 17
effect of pentachlorophenoxyacetic acid, 991
Streptomycin (see Antibiotics)
Streptothricin (see Antibiotics)
STRUCKMEYER, B. ESTHER, 276
Strumella coryneoidea, cause of bur oak canker, 101
Sugars, in grape, related to Botrytis cinerea infection, 325
Sugar beet, nematodes on, 872
viruses on: curly top —, strains, histology, 940
yellows —, tests for, 559
Sugar cane, red rot, Colletotrichum falcatum, control, 37
Physalospora tucumanensis, 37, 522
Swainsona salsula, 457
Sweet potato, black rot, heat control, 943
control by pasteurization, 801
Fusarium foot rot, 72
Fusarium surface rot, during and after storage, 228
internal cork, effect of storage temperature, 477
temperature effect on symptoms, 28
mutants, high carotene and reaction to pox, scurf, and wilt, 564
pox, caused by Streptomyces, 565
scurf (Monilochaetes infuscans), control, 562

wilt (Fusarium oxysporum batatas), control, 562
SYLVESTER, EDWARD S., 908
Syncephalastrum sp., 5
Syringa chinensis (Chinese lilac), 380

TAKAHASHI, WILLIAM N., 142, 481, 903
Tangelo, 107
TANRIKUT, SELAHATTIN, 1099
TAPKE, V. F., 139, 567, 622
TAPLEY, W. T., (660)
TARJAN, A. C., 566
Taxus media var. hicksii (Hicks yew), 380
TAYLOR, G. S., 34
Techniques, apparatus and equipment:
airplane, use in surveys for oak wilt, 561
cyclone separator, to collect dry microscopic particles, 282
to collect and disseminate rust spores, 287
gelatin capsules, used for nematode inoculations with single egg-mass, 564
homogenizer, for virus sample, 481
hypodermic needle, for inoculation of sorghum with Colletotrichum, 378
leaf punch, for spray deposit analysis, 568
moist chambers, of aluminum foil, 658
of polythene plastic, 476
soil pasteurizer, 28
Techniques, tests and methods:
acid test for peach phony disease, 20, 829
color test, for stone fruit viruses, 897
cytological, for Physalospora obtusa, 460
detection of Phytophthora in soil, 187
disease index, numerical evaluation of pine pole blight, 199
disease tests, for seed corn, incubation in cold soil, 18
glass tumbler-greenhouse method, 18
glass tumbler-paper doll method, 857
fungicidal treatment, of corn seed, glass-tumbler method, 748
of freshly cut potato seed-pieces, on tuber-unit potato planters, 945
germination tests, for seed corn, 18, 857
indexing cherry viruses, 479
injection of insects with virus juices, 25, 835
inoculation —, alfalfa with Sclerotinia, 1
corn internode sections with stalk-rot fungi, 26
lotus with Rhizoctonia, 1
inoculum (dried grain —), Sclerotinia trifoliorum, 553
isolation of water molds, 444
maintaining virulence in bacterial isolates, 186
medium, for sporulation of Diaporthe phaseolorum batatatis, 328, 331, 333
obtaining saliva from leafhoppers, for virus study, 1126
obtaining virus from immature melon and tomato fruits and juices, 475
radioactive elements, to determine distribution of pathogens in hosts, 794
deuteron bombardment to determine virus properties, 659
for smut hybridization, 840
isolation and culture of primary sporidia, 512
staining —, for fungus hyphae in leaf tissue, 3
virus extraction, from leaf tissue, 903
virus juice preparation for electron microscopy, for multiplication of virus and determination of increment curves, 33
virus resistance, greenhouse test method, 936
virus transfer, from local lesions to test plants, 185
Temperature, of diseased leaves, 945
of potato and tomato leaves and stems, relation to late blight, 36
effect on: barley powdery mildew, 624
Botrytis rot of grape, 320
carnation anther smut, 294
growth of Glomerella from peach, 451
healing of cut potato sets, 1079
internal cork of sweet potato, 28, 478
red clover infected with vein-mosaic virus and pea stunt isolates, 817
rust of snapdragon, control, 547
Sclerotinia sclerotiorum, growth and infection, 1099
Septoria nodorum sporulation, 576
tomato early blight, 127
virus symptoms, 36
virus transmission (mechanical), potato yellow dwarf, 486, 489
wheat powdery mildew, 625
growth and pathogenicity of Sclerotinia trifoliorum, 752
for hot-water-formalin treatment of iris bulbs, to control nematodes, 40
soil —, cold soil incubation of corn seed for disease and germination tests, 18, 747
relation to infectivity of Sclerotium rolfsii, 248
Rhizoctonia root rot of Lima bean, 20
seed corn emergence, 24
spinach soft rot, control, 711
storage —, relation to potato decay, weight loss, and surface browning, 565
Teasel (Dipsacus fullonum), virus on, transmitted by aphids, 191
Terminology, inoculum potential, for Verticillium-infested soil, 687
Terramycin (see Antibiotics)
TERRY, C. W., (568)
TERVET, IAN W., 282, 286
Tetramethylthiuramdisulfide, effect on metabolism of Fusarium roseum, 32
THANOS, ANDREW, 35
Theobroma cacao, 562
Therapeutants (see Chemotherapeutants)
Thielaviopsis paradoxa, 182
basicola, specialization and mutation, 34
THIERS, HARRY D., 499
THOMAS, C. A., 35, 997

THOMAS, H. REX, 231, 566, 967
THOMAS, W. D., JR., (301), 764, 959
THORNBERRY, H. H., (1), 35
THORNE, GERALD, (872)
Thrips tabaci, 20
  vector (?) for tobacco ringspot virus in eggplant, 211
THURSTON, H. W., JR., 660
TIFFANY, LOIS H., 35, 975
Tilletia (see also Smut):
  caries, heterothallism and hybridization, 511
    inheritance of sporidial number, 172
    nutrient study, 1115
    races, 7
    wheat dwarf bunt, 1035
  foetida, heterothallism and hybridization, 511
    inheritance of sporidial number, 173
    races, 7
TIMNICK, MARGARET BARTON, 327
Tissue culture, crown gall, bacteria-free, organic acids for, 16
Tobacco (see also Nicotiana):
  disease resembling leaf curl, 564
  nematodes (meadow and root knot) on, crop rotation effects, 31
  nematode root knot, 14
  nematode root rot, 14, 34
  Pythium stem rot and barn rot, 17
  viruses on: etch —, 1125
    leaf curl —, electron microscopy and sedimentation, 95
    mosaic —, 579, 593, 945
      geographic origin, 341
    potato Y —, 23
  wildfire, 10
    breeding for resistance to, 7
Tomato (Lycopersicon esculentum), 658, 944
  anthracnose, 660
  blossom-end rot, 660
  breeding for disease resistance, 16
  crown gall, 10
    aureomycin chemotherapy, 954
    effect of dyes on gall size, 911
    suppression by gamma radiation, 10
  early blight (Alternaria solani), air temperature and incidence, 127
    relation to toxic substance from Alternaria solani, 30, 1104
  fungicide spray program for, 660
  late blight, control, 39
    forecasting, 37
    plant temperatures, 36
  meadow nematodes on, 125
  Phytophthora collar rot, 937
  Phytophthora parasitica on roots, 13, 99
  resistance in, to curly-top virus, 936
    to spotted wilt virus, 257
  Stemphylium leaf spot, 15
  Trichothecium fruit rot, 9, 633
  varieties and hybrids, reaction to races of Fusarium oxysporum f. lycopersici, 239
  Verticillium wilt, resistance to, 986
    soil amendments for, 684
  virus disease resembling curly top, 415, 418
  virus rosette, caused by tobacco mosaic virus strain, 1091
  viruses on: potato yellow dwarf —, 490
    tobacco mosaic —, nutrition influence, 940
  white mold, caused by mites, 563
  yield loss caused by tobacco mosaic infection, 1
TOMPKINS, C. M., 654
TORGESON, D. C., 944
Torula marginata, 442
  utilis, 398
Toxicants, hydrazines for Sclerotinia, 658
  specificity of: acid compounds and Stemphylium, 658
    basic compounds and Sclerotinia, 658
  vapor-phase —, tested on Botrytis, 30
Toxicity, of copper, reversed by sulfhydryl compounds, 39
Toxins, from Alternaria solani, 1104
  endotoxins, from bacteria, 805
Toxoptera aurantii, 111
Tracer elements (see Radioactivity)
Translocation, poisons and dyes in oak, 2
Transportation (see Marketing)
Trichoderma spp., 440
Trichoderma, associated with Armillaria mellea in citrus soils, 674
Tricholaena repens, 770
Trichophyton interdigitales, 398
  rubrum, 398
Trichothecium roseum, tomato fruit rot, 10, 633
Trifolium (see also Clover):
  spp., as hosts for alfalfa witch's-broom virus, 457
  hybridum, 817
  incarnatum, 817
  pratense, 224, 817
    seed treatment, 610
  repens, 224, 817
Tristeza, virosis of citrus, 105, 114
Triticum (see also Wheat):
  aestivum, 376
  durum, 376
  timopheevi, 376
    Puccinia graminis tritici on, 15
TROUTMAN, JOSEPH, (10)
TU, DEN SHEN, (9)
TUCKER, C. M., (654)
TULLIS, EDGAR C., 529
Turf, dollar spot (Sclerotinia homeocarpa), 36
  melting out (Helminthosporium sp.), 36
  bent grass, yellow tuft, nematodes associated, 566
  seaside bent, brown patch (Rhizoctonia solani), control, 657

ULLSTRUP, ARNOLD J., 36
Urocystis gladiolii, cause of gladiolus smut, 941

tritici, wheat flag smut, 1035
physiologic specialization, 809
Uromyces appendiculatus, 3
phaseoli, 937
Ustilago avenae, races, 7
bullata, hybridization with U. hordei, 839
hordei, hybridization with U. bullata, 839
races, 7
kolleri, races, 7
nigra, races, 7
from U. S. and Israel, 139
nuda (loose smut of barley), infection of barley seeds and seedlings, 261
races, 7
tritici (loose smut of wheat), hot-water treatment on winter wheat, 875
infection in wheat seeds and seedlings, 261
races, 7
violacea, carnation anther smut, 291

Vaccinium macrocarpon, 722
VALLEAU, W. D., 209
Vanda orchid, transit rot, 938
yellow bud blight caused by nematodes, 938
VAN GELUWE, J. D., (466)
VARNEY, E. H., 36
VATTER, A. E., (1), (35)
VAUGHAN, EDWARD K., (1099)
VAUGHN, JOHN R., 36
Venturia inaequalis, gene pairs for pathogenicity, 19
genetic linkage groups, 4
on scab-resistant clones of Malus, 32
pirina, 560
Verticillium, strawberry wilt, 4
albo-atrum, in rose, bud graft transmission, 781
symptoms confused with viroses, 783
soil amendments for, 684
soil fumigation for, 939
soil invader or soil inhabitant, 944
tomato wilt, 986
Vetch (see Vicia)
Viburnum carlesi (fragrant viburnum), 379
opulus (European cranberrybush), 380
Vicia angustifolia, 18
articulata, 18
atropurpurea, 18
dasycarpa, 18
faba, 224, 817
grandiflora, 18
pannonica, 18
sativa (common vetch), Colletotrichum anthracnose on, 18
variabilis, 457
villosa (hairy vetch), 18, 224
Vigna sinensis, 224, 490, 817
Vinca rosea, 190
Vines (see also Grape), sodium arsenite for black measles control, 939
Viruses, general:
abortion of pollen by, 211
acid test for peach phony disease, 20
concentration, determined by electron microscopy, 33
tobacco mosaic strains in Nicotiana sylvestris leaves, 582
homogenizer for virus samples from plant tissue, 481
inactivation, by chemicals, calcium chloride and zinc sulfate for carnation mosaic, 302
by heat, carnation mosaic, 301
inactivators, in Phytolacca extract, for tobacco mosaic, 586
indexing, corn as test plant for:
citronella mosaic virus, 759
sugar-cane mosaic virus, 758
potatoes for virus X, 18
strawberry viruses on Fragaria vesca, 10
inhibitor, 32
injection (mechanical) of insect vectors, corn stunt virus, 658
inoculations, phosphate effect, 945
local lesions, 236
with tobacco mosaic strain, 593
on Nicotiana sylvestris, 582
multiplication, tobacco mosaic strains, 588
New-World origin of tobacco mosaic virus, 17
nucleoprotein, measured by ultraviolet absorption, 142
particles, increment curves for number of, 33
in plant species and tissues, 78
serial passage through insect vector, 25
symptoms suppressed by antibiotics and chemicals, 23
symptom similarity, peach ring spot and cherry necrotic ring spot, 942
techniques, for virus transfer from local lesions to test plants, 185
Virus(es), alfalfa mosaic —, ethylene production, 433
strain on bean, 566
alfalfa witch's-broom —, insect transmission to legumes, 456
aster yellows —, in canna, 190
in saliva of aster leafhopper, 1127
serial passage through leafhopper, 25
barley false-stripe —, seed-borne, 563
bean virus 1, 5
bean virus 2, on pea, 5
transmission, by aphids, 495
mechanical, 495
bean virus 4, 5
bean common mosaic —, 567
bean pod-distorting —, 5
bean red-node —, longevity, 764
seed transmission, 959
bean Southern mosaic —, 5, 567
relation to bean black root, 865
bean yellow dot —, 967
Brassica nigra —, aphid vector efficiency, 908
cabbage viruses A and B, 1083
cantaloupe mosaic —, 2

carnation mosaic —, Gomphrena as indicator plant, 945
inactivation by heat, 301
by chemicals, 302
purification, 1
carrot bolting disease, caused by big-bud virus, 22
chrysanthemum Q —, 947
chrysanthemum stunt —, indicator plants, 947
cherry (little-cherry) —, symptoms modified, 136
cherry ringspot —, 661
effect on yield of sour cherries, 24
cherry (ringspot and yellows) —, indexing hosts, 479
cherry yellows —, 661
effect on yield of sour cherries, 24
relation to prune dwarf, 27
response to N, 661
citronella mosaic —, on corn, 759
citrus quick decline —, diagnostic symptoms on lime seedlings:
stem pitting, 787
veinclearing, 786
relation, to lime disease of West Africa, 787
to stem-pitting disease of grapefruit in South Africa, 789
transmission by Aphis gossypii, 788
xyloporosis in Palestine and Brazil probably distinct from, 791
corn stunt —, mechanical transmission to insect vector, 658, 833
minimum incubation period in vector, 836
cucumber —, from sour cherry to cucurbits, 16
cucumber virus 1, on gladiolus, 5
cucumber mosaic —, production of local lesions on Chenopodium hybridum, 31
overwintering, 12, 1001
strains, 11
Cymbidium mosaic —, 401
transmission (mechanical), 404
filaree red-leaf —, 221, 699
host range, 224
retention by aphids, 225
transmission by aphids, 223, 699
Ladino clover mosaic, —, 940
lettuce mosaic —, control by mosaic-free seed, 939
lily rosette —, pathological anatomy, 67
Lima-bean mosaic —, inheritance of resistance to, 231
orchid ring-spot —, on Odontoglossum, 648
electron microscopy, 650
transmission (mechanical), 648
pea stunt —, identical with red clover vein-mosaic —, 15, 819
host range, 817
physical properties, 818
symptoms, 814
transmission, 818
peach yellow leaf roll —, 942
peach ringspot —, breaking patterns on peach flowers, 936
Pierce's disease —, host range as determined by insect transmission, 920
potato interveinal mosaic —, 564
potato X —, ethylene production, 434
indexing for, 18
potato Y —, ethylene production, 431
variation in virulence, 23
potato yellow dwarf —, properties of, 213
filterability, 219
longevity, 214, 215
sedimentation, 217
stability, 219
transmission (mechanical) in sap, 483
prune dwarf —, relation to sour-cherry yellows, 27
red clover vein-mosaic —, relation to pea stunt virus, 15, 814
sour-cherry —, mechanically transmitted to cucumber, temperature effect on symptoms, 36
stone fruit —, color test, 897
strawberry virus 1, 10
strawberry virus 2, 10
strawberry virus 3, 10
sugar-beet curly-top —, histology, 940
mutant causing vein yellowing, 935
resistance in tomato, greenhouse test method, 936
testing technique for recovery of virus, 475
sugar-beet yellows —, tests for, 559
sugar-cane mosaic —, on corn, 758
physical properties, 761
teasel mosaic —, aphid transmission, 191
tobacco disease resembling leaf curl, 564
tobacco etch —, association with white burley character, 1125
tobacco leaf-curl —, electron microscopy and sedimentation, 95
tobacco mosaic —, 33
effect on yield of tomato, 1
ethylene production, 433
extractions from leaf tissue, 903
in interspecific tomato crosses, 944
indications of New-World origin, 341
invasiveness increased on bean by rust infection, 39
local-lesion reaction, inheritance in tobacco, 593
mild strain, 594
properties affected by nitrogen deficiency, 235
infectivity, 236
virus particle size, 236
properties determined by inactivation deuterons, 659
reinfection of mosaic leaves of Nicotiana sylvestris by other virus strains, 13
rodlike particles in host tissue, 81
strain causing tomato rosette, 1091
strains, 935
superinfection by strains of, 579
on tomato, nutrition effect, 940

ultraviolet absorption and nucleoprotein, 142
tobacco ringspot —, cause of eggplant yellows, 209
ethylene production, 433
on gladiolus, 5
tomato bushy stunt, 33
tomato disease resembling curly top, 415
histology, 418
tomato spotted wilt, resistance to, in tomato, 257
tristeza —, of citrus, mild strain, 114
transmission by budding, 118
transmission by insects, 105
Western X —, ultracentrifuge fractionation of virus preparation, 936
Western-X little-cherry, histology of cherry fruits and pedicels, 941
wild cucumber mosaic —, 942
X-disease —, etiology and host range, 14
Vitamins (see also Growth substances; Hormones):
tomato juice, effect on wilting ability of mealybug, 774
Vitis californica, 224
vinifera (European grape), 922

WADDOUPS, VICTOR, (936), (986)
WAGGONER, P. E., 36
WAHID, M. A., 37
WALKER, J. C., 37, (865), (1059), (1083)
WALLACE, J. M., 785
WALLIN, J. R., 37
Walnut, English, disease of unknown cause, in Europe, 561
WARREN, J. R., 794, 1037
Water-soaking, related to bean rust infection, 937
Watermelon, Fusarium wilt, 26
role of host nutrition, 38
WATSON, R. D., 944
WEBER, G. F., (4), (15), 615
WEBER, PAUL V. V., 593
WEEKS, T. E., (897)
WEI, C. T., 38
WELCH, D. S., (199)
WELCH, J. E., (939)
WELLMAN, FREDERICK L., 38
WELSH, MAURICE F., 136
WESTER, R. E., (566)
Wheat (see also Triticum):
Erysiphe graminis on, 622
Helminthosporium seedling blight, effect of 2,4-D, 1011
effect of juices on germination of stem rust spores, 27
leaf rust, physiologic races from Uruguay, 736
seed, microflora, 9
survival of Sclerotium rolfsii in, 246
seed treatment in South America, 369
seedling blight, Rhizoctonia plumule blight, 375
smut, bunt, 511
nutrient study, 1115
dwarf bunt, 1035
flag — (Urocystis tritici), 809, 1035
loose —, hot-water treatment, 875
in seeds, seedlings, and adult plants, 261
stem rust, race 15B, 33
survival of races, 56
WHEELER, H. E., (25), 38
WHITE, H. E., (291)
WILCOX, MARGUERITE S., 477
WILCOX, R. B., 722
Wildfire, of tobacco, 7, 10
WILES, A. B., (37), 38, 1059
WILHELM, STEPHEN, 684, (939), 944
WILKINSON, R. E., (31)
WILKS, JACK M., (136)
WILLIAMSON, C. E., (431)
WILSON, E. E., (938)
WILSON, J. D., 39, 1050
Wilting, induced by polysaccharides from bacteria, 804
Wilt(s), carnation —, chemotherapeutants for, 11, 33
control by soil disinfestation, 657
Crotalaria fusarium —, 716
djill fusarium —, 19
of flax, 22
of muskmelon and watermelon, caused by Fusarium, 26
oak —, caused by Chalara quercina, 2, 561, 659
control, 23
local spread, 30
sweet potato Fusarium —, relation to infection by foot-rot Fusarium, 75
of radish, caused by Fusarium, 30
red clover —, caused by Fusarium, 7
tomato fusarium —, 16
chemotherapeutants for, 11
tomato verticillium —, 986
WOLF, F. A., (94)
Wood, creosoted —, Hormodendrum resinae from, 658
Wounds, relation to: Alternaria black rot of orange, 7
Botrytis rot of grape, 319
Fusarium rot on sweet potato, 75
WRIGHT, CHARLES M., 945
WRIGHT, DAVID W., (29)

Xanthomonas campestris, on cabbage, 821
malvacearum, cause of blight on cotton, histology, 499
phaseoli, endotoxins and wilt-inducing polysaccharides from, 806
phaseoli var. sojensis, soybean bacterial pustule, overwintering, 14
pruni, inoculation of peach seedlings, 8
Xiphinema americanum, nematode on potato, 24

YARWOOD, C. E., 39, 194, 945
YERKES, WILLIAM D., JR., 854
YODER, DONALD M., 39
YOUNG, H. C., JR., 479
YOUNG, ROY A., (940), 945
Yucca gloriosa, 771

ZAUMEYER, W. J., (231), 567
ZENTMYER, GEORGE A., 946
ZSCHEILE, F. P., 1115
Zea mays (see Corn), 758

ERRATA

Volume 40

Page 1081, table 5, experiment B, column 2: *delete* followed by 31 days on immune plants at 25° C.

Volume 41

Page 16, line 2: *read* 20–62 μ × 7–23 μ *for* 28–55 μ × 11–23 μ.
Page 21, line 18: *read* favorable *for* unfavorable.
Page 146, par. 3, line 2: *read* 1943 *for* 1934.
Page 150, par. 2, line 3: *read* 1943 *for* 1934.
Page 245, by-line: *read* Paterson *for* Patterson.
Page 335, par. 5, line 8: read *Cytosporina* for *Cytosporium*.
Page 352, line 2: *read* regions *for* region.
Page 365, reference 15, line 1: *read* megaterium *for* megatherium.
Page 365, reference 17, line 1: *read* in soil science *for* into the soil.
Page 381, Council officers, last line, *read* Oregon State College, Corvallis, Oregon, *for* Washington State College, Pullman, Washington.
Page 412, legend, figure 3, line 2: *read* (d) *for* (c).
Page 564, line 6: *read* 24° *for* 74°.
Page 604, table 5, column 1, line 6: *read* F_3 families *for* F_2 families.
Page 694: par. 2, line 7: *read* 7.5 plants . . . susceptible and 2.5 resistant *for* 7.75 . . . and 2.25.
Page 751, table 1, heading over six columns at right: *read* Incubated at *for* Inoculated at.
Page 770, centerhead, line 2: *read* WILD HOSTS *for* WILT HOSTS.
Page 771, line 3: read *gloriosa* for *glorisa*.
Page 793, reference 9, line 2: *read* 285–287 *for* 385–287.
Page 840, line 6: *read* (Pk.) *for* (Tk.).
Page 845, line 5 from bottom: *read* scarcely *for* scarely.
Page 953, table 1, treatment F, column 2: *read* after inoculation *for* do.

PHYTOPATHOLOGY

AN INTERNATIONAL JOURNAL

OFFICIAL ORGAN OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

VOLUME 41
JANUARY–DECEMBER, 1951

EDITORS

HELEN HART
M. W. GARDNER
G. C. KENT
S. E. A. MCCALLAN

ASSOCIATE EDITORS

HAROLD T. COOK
S. P. DOOLITTLE
BERCH W. HENRY
C. S. HOLTON
RANDALL R. KINCAID
THOR KOMMEDAHL
J. G. LEACH
J. DUAIN MOORE
H. R. ROSEN
JOHN A. STEVENSON
COYT WILSON
G. A. ZENTMYER

BUSINESS MANAGEMENT

A. E. DIMOND
L. J. ALEXANDER

THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

OFFICERS

J. G. HORSFALL, *President*
GEORGE L. MCNEW, *Vice-President*
S. E. A. MCCALLAN, *Secretary*
A. E. DIMOND, *Treasurer*

COUNCILORS

L. M. BLACK
S. J. P. CHILTON
C. E. COX
S. M. DIETZ
EARLE W. HANSON
G. C. KENT
C. M. TUCKER
COYT WILSON

PUBLISHED FOR THE SOCIETY
BUSINESS PRESS, INC.
LANCASTER, PENNSYLVANIA

SCIENCE
LIBRARY
QK
1
.P6

SUSTAINING ASSOCIATES

Butler County Mushroom Farm, Inc., West Winfield, Pennsylvania.
California Packing Corporation, Swedesboro, New Jersey.
Campbell Soup Company, Agricultural Research Department, Riverton, New Jersey.
The Dow Chemical Company, Midland, Michigan.
E. I. du Pont de Nemours & Company, Wilmington 98, Delaware.
Ferry-Morse Seed Company, Detroit, Michigan.
Freeport Sulphur Company, New Orleans 5, Louisiana.
H. J. Heinz Company, Pittsburgh 30, Pennsylvania.
Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.
Rohm & Haas, Washington Square, Philadelphia 5, Pennsylvania.
Tennessee Corporation, 619-27 Grant Building, Atlanta 1, Georgia.
Yoder Brothers, Inc., Barberton, Ohio.

CONTENTS OF VOLUME 41, 1951

No. 1. JANUARY

Abstracts of papers accepted for presentation at the forty-second annual meeting of the Society, Memphis, Tennessee, December 1, 2, and 3, 1950 1
Tolerance of Wedgewood iris bulbs to a hot-water-formalin treatment. WILBUR D. COURTNEY AND CHARLES J. GOULD 40
Dutch elm disease in young elm seedlings. NESTOR E. CAROSELLI AND A. W. FELDMAN 46
Organic fungicides in the control of apple scab and European red mite. M. T. HILBORN AND F. H. LATHROP 52
Survival of races of wheat stem rust in mixtures. WILLIAM Q. LOEGERING 56
Anatomical symptoms useful in diagnosis of lily rosette. F. P. MCWHORTER AND PHILIP BRIERLEY 66
Fusarium foot rot of sweet-potato sprouts. T. T. MCCLURE 72
Virus particles in various plant species and tissues. JAMES JOHNSON 78
The virus of tobacco leaf curl. II. D. G. SHARP AND F. A. WOLF 94
Phytopathological Notes:
Phytophthora root rot of tomatoes. J. P. FULTON AND NEIL D. FULTON 99
Strumella canker on bur oak in Pennsylvania. CHARLES L. FERGUS 101

No. 2. FEBRUARY

Studies on transmission of the tristeza virus by the vector, Aphis citricidus. A. S. COSTA AND T. J. GRANT 105
A mild strain of the tristeza virus of citrus. THEODORE J. GRANT AND A. S. COSTA 114
The efficacy of certain chemical soil treatments against meadow nematodes. R. G. OWENS AND D. E. ELLIS 123
Effect of air temperature on incidence and development of the early blight disease of tomato. GLENN S. POUND 127
Induced modification of symptom severity in little cherry. MAURICE F. WELSH AND JACK M. WILKS 136
New physiologic races of Ustilago nigra from the United States and Israel. V. F. TAPKE 139
Ultraviolet absorption as a measure of tobacco-mosaic virus nucleoprotein. WILLIAM N. TAKAHASHI 142
Effects of a source of heavy infection on the development of Dutch elm disease in a community. O. N. LIMING, EDGAR G. REX, AND KENNETH LAYTON 146
The dispersal of viable fungus spores by insecticides. A. W. DIMOCK 152
The dispersal of viable spores of phytopathogenic fungi by fungicidal sprays. A. W. DIMOCK 157
The relationship between fungicidal activity and chemical constitution. CLARENCE T. MASON, R. W. BROWN, AND AUDREY E. MINGA 164
Heritability of number of primary sporidia produced by spores of Tilletia caries and T. foetida. C. S. HOLTON AND C. V. LOWTHER 172
A canker disease of the coffee tree in Colombia and Venezuela. RAFAEL E. PONTIS 178
Phytopathological Notes:
Suggestions for transferring virus from local lesions to test plants. FRANK P. MCWHORTER 185
Maintaining virulence in isolates of Pseudomonas solanacearum. ARTHUR KELMAN AND J. H. JENSEN 185
A simple method for detecting the presence of Phytophthora cinnamomi Rands in soil. E. J. ANDERSON 187
Biologic races of Ditylenchus dipsaci on alfalfa. OLIVER F. SMITH 189
Aster yellows in canna. FLOYD F. SMITH AND PHILIP BRIERLEY 190
An aphid-transmitted virus disease of fuller's teasel and pincushion flower. WARREN N. STONER 191
Defoliation by a rain-favored, a dew-favored, and a shade-favored disease. C. E. YARWOOD 194
Excess callusing in roses as related to flower production and vegetative growth. E. S. MCDONOUGH AND S. C. FOLL 196

No. 3. MARCH

Pole blight of Western white pine: A numerical evaluation of the symptoms. THOMAS S. BUCHANAN, GEORGE M. HARVEY, AND D. S. WELCH 199

Tobacco ring-spot virus: the cause of eggplant yellows. W. D. VALLEAU 209
Further studies on the properties of potato yellow-dwarf virus. L. M. BLACK 213
Red leaf, an aphid-borne virus disease of filaree. NORMAN W. FRAZIER 221
Surface rot of Porto Rican sweet potatoes. W. J. MARTIN AND L. H. PERSON 228
Inheritance of resistance to Lima-bean mosaic virus in the Lima bean. H. REX THOMAS, W. J. ZAUMEYER, AND HANS JORGENSEN 231
The effects of nitrogen deficiency on the properties of tobacco mosaic virus. MEYER CHESSIN 235
The pathogenicity of races 1 and 2 of Fusarium oxysporum f. lycopersici. J. W. GERDEMANN AND ARTHUR M. FINLEY 238
Physiology and parasitism of Sclerotium rolfsii. W. M. EPPS, J. C. PATERSON, AND I. E. FREEMAN 245
Resistance in tomato to the spotted wilt virus. PAUL G. SMITH AND M. W. GARDNER 257
Infection in seeds and seedlings of wheat and barley in relation to the development of loose smut. W. POPP 261
Wound-periderm formation in white-pine trees resistant to blister rust. B. ESTHER STRUCKMEYER AND A. J. RIKER 276
A method for the collection of microscopic particles. IAN W. TERVET, A. J. RAWSON, E. CHERRY, AND R. B. SAXON 282
The use of cyclone separators in race identification of cereal rusts. IAN W. TERVET AND R. C. CASSELL 286
Anther smut of carnation. J. L. SPENCER AND H. E. WHITE 291
Phytopathological Notes:
Helminthosporium victoriae as a leaf-spotting pathogen on oats in Louisiana. J. G. ATKINS, JR. 300
The inactivation of the carnation mosaic virus. GAIL E. RUMLEY AND W. D. THOMAS, JR. 301

No. 4. APRIL

Purple seed stain of soybean. HARRY H. MURAKISHI 305
Factors influencing the infection of table grapes by Botrytis cinerea (Pers.). K. E. NELSON 319
Factors affecting sporulation of Diaporthe phaseolorum var. batatatis from soybean. MARGARET BARTON TIMNICK, VIRGIL GREENE LILLY, AND H. L. BARNETT 327
The chemotherapeutic control of Fusarium wilt of carnations. E. M. STODDARD AND A. E. DIMOND 337
Indications of a New-World origin of tobacco mosaic virus. FRANCIS O. HOLMES 341
Bacteria in healthy potato tissue. JOHN P. HOLLIS 350
Treatment of crop seeds in Brazil and Paraguay. R. HOWARD PORTER 367
Rhizoctonia solani in relation to cereal crown and root rots. GEORGE W. BRUEHL 375
Phytopathological Notes:
A correction of the identification of Helminthosporium causing black ear rot of corn. C. D. SHERBAKOFF 378
A method for large-scale inoculation of sorghum with Colletotrichum. F. J. LEBEAU 378
Control of white root rot with chloropicrin in a border of ornamental plants. J. S. COOLEY 379
Report of the 42nd Annual Meeting of The American Phytopathological Society 381

No. 5. MAY

Endomycin, a new antibiotic. DAVID GOTTLIEB, P. K. BHATTACHARYYA, H. E. CARTER, AND H. W. ANDERSON 393
Mosaic or black streak disease of Cymbidium orchids. D. D. JENSEN 401
A tomato disease resembling curly top. N. J. GIDDINGS, C. W. BENNETT, AND A. L. HARRISON 415
Histological studies of a tomato disease resembling curly top. C. F. LACKEY 418
The production and role of antibiotics in the soil: I. The fate of streptomycin. PAUL SIMINOFF AND DAVID GOTTLIEB 420
Physiologically active emanations from virus-infected plants. A. FRANK ROSS AND C. E. WILLIAMSON 431
Fungi associated with the roots of littleleaf-diseased and healthy shortleaf pine. W. A. CAMPBELL 439
Anthracnose of peaches. G. B. RAMSEY, M. A. SMITH, AND BARBARA C. HEIBERG 447
Insect transmission of alfalfa witch's-broom virus to other legumes. E. C. KLOSTERMEYER AND J. D. MENZIES 456

Some nuclear phenomena in Physalospora obtusa. ROBERT AYCOCK 459
Field evaluation of glyoxalidine compounds for control of cherry leaf spot. W. D. MILLS AND J. D. VAN GELUWE 466
Phytopathological Notes:
A method of testing some plants for curly top. N. J. GIDDINGS 475
The use of thin polythene sleeving for moist chambers in inoculation studies. W. R. STANTON 476
Storage temperature and the development of internal cork in sweet potatoes. MARGUERITE S. WILCOX AND BOYCE D. EZELL 477
Indexing hosts for sour-cherry ring spot and yellows. H. C. YOUNG, JR. 479
A ground glass homogenizer for preparing virus samples from plant tissue. WILLIAM N. TAKAHASHI 481

No. 6. JUNE

Factors affecting sap transmission of the potato yellow-dwarf virus. R. W. HOUGAS 483
The reaction of Perfection-type peas to Wisconsin bean virus 2 isolates from pea. D. J. HAGEDORN 494
A histological study of bacterial blight of cotton. HARRY D. THIERS AND LESTER M. BLANK 499
Methods and results of studies on heterothallism and hybridization in Tilletia caries and T. foetida. C. S. HOLTON 511
Infection of sugar-cane stalks by the red-rot fungus, Physalospora tucumanensis Speg. R. J. STEIB AND S. J. P. CHILTON 522
Fusarium moniliforme, the cause of a stalk rot of sorghum in Texas. EDGAR C. TULLIS 529
Effect of climate on disease development, injuriousness, and fungicidal control, as exemplified by snapdragon rust. A. W. DIMOCK AND KENNETH F. BAKER 536
Infection studies with dried grain inoculum of Sclerotinia trifoliorum. K. W. KREITLOW 553
Report and abstracts of the Eighth Annual Meeting of the Potomac Division of The American Phytopathological Society 559
Phytopathological Notes:
A leaf punch for sampling foliage for analysis of spray deposits. ROBERT E. ADAMS, ROBERT M. PRATT, AND C. W. TERRY 568
Heart rot of black ash in Minnesota. DONALD M. STEWART 569

No. 7. JULY

Factors influencing sporulation by Septoria nodorum. GERALD S. RICHARDS 571
Superinfection by strains of tobacco mosaic virus. ROBERT W. FULTON 579
Inheritance of a necrotic-lesion reaction to a mild strain of tobacco mosaic virus. PAUL V. V. WEBER 593
Effect of seed treatment on forage legumes in wet and dry soil. J. W. GERDEMANN 610
Silky threadblight of Elaeagnus pungens caused by Rhizoctonia ramicola n. sp. GEORGE F. WEBER AND DANIEL A. ROBERTS 615
Influence of preinoculation environment on the infection of barley and wheat by powdery mildew. V. F. TAPKE 622
Trichothecium fruit rot of glasshouse tomatoes. ROBERT E. DEEMS 633
Two cankers of cinchona in Guatemala caused by Phytophthora cinnamomi and P. parasitica. ELLIS F. DARLEY AND MARCO A. FLORES 641
A virus ring spot of Odontoglossum orchid: Symptoms, transmission, and electron microscopy. D. D. JENSEN AND A. HERBERT GOLD 648
Phytopathological Notes:
Stem and root rot of Daphne odora caused by Phytophthora parasitica. C. M. TOMPKINS AND C. M. TUCKER 654
Hollow heart of cacao beans. R. CIFERRI 656
Meeting of the Northeastern Division of The American Phytopathological Society 657

No. 8. AUGUST

A preliminary report on the response of virus-infected Montmorency cherry trees to nitrogen fertilizer. JOHN C. CAIN AND K. G. PARKER 661
The destruction of Armillaria mellea in citrus soils. DONALD E. BLISS 665
Effect of various soil amendments on the inoculum potential of the Verticillium wilt fungus. STEPHEN WILHELM 684
Inheritance of resistance to spot blotch in barley seedlings. DEANE C. ARNY 691

The insect vector relationships of the filaree red-leaf virus, with special reference to a latent-period difference between nymphs and adults in Macrosiphum geranicola (Lambers). CHRIS W. ANDERSON 699
Control of decay in prepackaged spinach. B. A. FRIEDMAN 709
Physiological races of the Crotalaria wilt Fusarium. JOANNE K. ARMSTRONG AND G. M. ARMSTRONG 714
Tests of cranberry varieties and seedlings for resistance to the leafhopper vector of false-blossom disease. R. B. WILCOX 722
Leaf rust of wheat, Puccinia rubigovera tritici, in Uruguay. CELIA S. BOASSO AND MOSES N. LEVINE 736
The occurrence of Phytophthora cinnamomi in the soil under pine stands in the Southeast. W. A. CAMPBELL 742
A new technique for incubating seed corn in cold soil for disease tests. PAUL E. HOPPE 747
Effect of temperature on growth and pathogenicity of Sclerotinia trifoliorum. K. W. KREITLOW AND V. G. SPRAGUE 752
Corn seedlings as test plants for the sugar-cane mosaic virus. A. S. COSTA AND M. P. PENTEADO 758
Phytopathological Notes:
Longevity of the red-node virus in beans. W. D. THOMAS, JR., AND R. W. GRAHAM 764
Bronze leaf of coconut palm in the Dominican Republic and Venezuela. R. CIFERRI 765
Red rot of sisal in Venezuela. R. CIFERRI 766

No. 9. SEPTEMBER

The feeding sequence of Pseudococcus brevipes (Ckl.) in relation to mealybug wilt of pineapples in Hawaii. WALTER CARTER 769
Bud transmission of Verticillium in roses. A. W. DIMOCK 781
Recent developments in studies of quick decline and related diseases. J. M. WALLACE 785
The use of radioisotopes in determining the distribution of Bacterium stewartii Erw. Smith within corn plants. JOHN R. WARREN 794
Effect of pasteurization on black rot of sweet potatoes. J. S. COOLEY AND L. J. KUSHMAN 801
Wilt-inducing polysaccharides derived from crown-gall, bean-blight, and soft-rot bacteria. WILIAM A. FEDER AND PETER A. ARK 804
Physiologic specialization in Urocystis tritici Köern. ABDUL HAFIZ 809
A comparative study of the viruses causing Wisconsin pea stunt and red clover vein mosaic. D. J. HAGEDORN AND E. W. HANSON 813
Extent of transmission of certain cabbage pathogens by seed grown in western Washington. GLENN S. POUND, PEN-CHING CHEO, O. H. CALVERT, AND R. D. RAABE 820
The acid test for phony disease of peach. GLENN KENKNIGHT 829
Mechanical transmission of corn stunt virus to an insect vector. KARL MARAMOROSCH 833
Induced hybridization in graminicolous smut fungi. I. Ustilago hordei × U. bullata. GEORGE W. FISCHER 839
Phytopathological Notes:
Soreshin of cotton and its relationship to thrips damage. D. C. NEAL AND L. D. NEWSOM 854
Spinach smut, Entyloma ellisii Halsted, a new record for Washington State. WILLIAM D. YERKES, JR., CHARLES GARDNER SHAW, AND GEORGE W. FISCHER 854
A glass-tumbler–paper-doll technique for seed corn incubation and germination tests. PAUL E. HOPPE 856
Control of strawberry red stele by chemotherapy. E. M. STODDARD 858

No. 10. OCTOBER

Effect of humidity on infection of table grapes by Botrytis cinerea. K. E. NELSON 859
The relation of southern bean mosaic to black root. G. H. BRIDGMON AND J. C. WALKER 865
Infection of sugar beets by Ditylenchus destructor Thorne, the potato rot nematode. C. E. DALLIMORE AND GERALD THORNE 872
Differential lethal effect of hot-water treatment on the loose smut mycelium in nine varieties of winter wheat. WAYNE M. BEVER 875

Pseudomonas marginalis as the cause of soft rot of imported witloof chicory. B. A. FRIEDMAN 880
Larval emigration from cysts of the golden nematode of potatoes, Heterodera rostochiensis Wollenweber. B. F. LOWNSBERY 889
Studies on a color test for stone fruit virus diseases. R. C. LINDNER, T. E. WEEKS, AND H. C. KIRKPATRICK 897
A comparison of methods for extracting tobacco mosaic virus from leaf tissue. WILLIAM N. TAKAHASHI 903
Relation of plant species inoculated to efficiency of aphids in the transmission of Brassica nigra virus. EDWARD S. SYLVESTER AND JOHN N. SIMONS 908
The effect of dyes in retarding the development of crown galls. A. E. DIMOND, E. M. STODDARD, AND SAUL RICH 911
Bacterial fire blight of raspberry. MORTIMER P. STARR, CANUTO CARDONA, AND DONALD FOLSOM 915
Host range of the Pierce's disease virus of grapes as determined by insect transmission. J. H. FREITAG 920
Report and abstracts of the thirty-third annual meeting of the Pacific Division of The American Phytopathological Society 935
Phytopathological Note:
Report on indicator plants for chrysanthemum stunt virus and on a previously unreported chrysanthemum virus. JOHN R. KELLER 947

No. 11. NOVEMBER

Effect of 2,4-D on stem-rust development in oats. I. A. IBRAHIM 951
Aureomycin chemotherapy of crown gall in tomatoes. FRED A. BLANCHARD 954
Seed transmission of red node virus in pinto beans. W. D. THOMAS, JR., AND R. W. GRAHAM 959
Cellular autonomy in crown gall. ARMIN C. BRAUN 963
Yellow dot, a virus disease of bean. H. REX THOMAS 967
Delayed sporulation of Colletotrichum on soybean. LOIS H. TIFFANY 975
Inheritance of resistance to Verticillium wilt in a tomato cross. LESTER SCHAIBLE, ORSON S. CANNON, AND VICTOR WADDOUPS 986
The selective action of pentachlorophenoxyacetic acid against Streptomyces scabies (Thaxt.) Waksman & Henrici in culture media. R. H. GARBER, L. A. SCHAAL, AND JESS L. FULTS 991
Anthracnose of digitalis. C. A. THOMAS 997
The overwintering of the cucumber mosaic virus. HWEI CHUNG FAAN AND JAMES JOHNSON 1001
Effect of 2,4-D on seedling blight of wheat caused by Helminthosporium sativum. YU-TIEN HSIA AND J. J. CHRISTENSEN 1011
Notes on the physiology and pathogenicity of Centrospora acerina (Hartig) Newhall. PAUL NEERGAARD AND A. G. NEWHALL 1021
Phytopathological Notes:
Antibiotic potentialities of some strains of Streptomyces scabies. PETER A. ARK AND J. W. OSWALD 1034
Varietal reaction to dwarf bunt and flag smut, and the occurrence of both in the same wheat plant. C. S. HOLTON AND THOMAS L. JACKSON 1035
Dominance of an actinomycete in a soil microflora after 2,4-D treatment of plants. J. R. WARREN, FREDERICK GRAHAM, AND GLENN GALE 1037
Effect of growth-promoting substances on the germination of urediospores of crown rust. B. PETURSON 1039

No. 12. DECEMBER

The blackpatch disease of red clover and other legumes in West Virginia. J. G. LEACH AND EDWARD S. ELLIOTT 1041
Field testing of fungicides for vegetable disease control. J. D. WILSON 1050
The relation of Pseudomonas lachrymans to cucumber fruits and seeds. A. B. WILES AND J. C. WALKER 1059
Development and parasitism of Physoderma graminis (Büs.) Fischer, on Agropyron repens (L.) Beauv. K. S. GOPALKRISHNAN 1065
Effect of various chemicals on the natural healing of freshly cut potato sets. G. B. SANFORD 1077
Mosaic resistance in cabbage. GLENN S. POUND AND J. C. WALKER 1083
Tomato rosette, a severe disease caused by a strain of tobacco mosaic virus. W. C. PRICE AND S. B. FENNE 1091

Studies on the physiology of Selerotinia selerotiorum. SELAHATTIN TANRIKUT AND EDWARD K. VAUGHAN 1099
The production of a toxic material by Alternaria solani and its relation to the early blight disease of tomato. GLENN S. POUND AND MARK A. STAHMANN 1104
Nutrient studies with the wheat bunt fungus, Tilletia caries. F. P. ZSCHEILE 1115
Phytopathological Notes:
Association in tobacco of the severe symptom response to etch virus and the white burley character. R. H. STOVER 1125
A method for obtaining saliva from certain leafhoppers. ARMIN C. BRAUN AND KARL MARAMOROSCH 1126